Description of three environmental co-management systems in the Western Cape

By

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DECLARATION

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ABSTRACT

Environmental management is becoming an increasingly popular phrase as businesses, organisations and communities are becoming more environmentally conscious. Conservation areas are under a significant amount of pressure from stakeholders to deliver effective collaboration and co-management strategies. What was previously understood as fragmented and underdeveloped, environmental conservation areas are now moving towards becoming decentralised, self-regulated and holistic in nature. Previously discouraged public involvement has now come to the forefront of government's focus as public entities can aid in providing promised service delivery to conservation areas.

As environmental conservation areas consist of a variety of ecosystems distributed throughout South Africa, this research focuses on three different conservation areas. The aim is to compare different managerial systems across the boundaries of conservation management in the context of international case studies, the South African government, as well as policy mandates already in place in the conservation areas. The purpose of the study is to compare different collaborative approaches by assessing the managerial methods within each of the chosen conservation areas. The overall purpose is to assess the various levels of stakeholder involvement by evaluating the levels of participation between the co-management areas and stakeholders involved.

A biosphere reserve, a water management system, and a land management system were studied. For the biosphere reserve case study, the Cape West Coast Biosphere Reserve was investigated. The Breede-Overberg Catchment Management Agency was studied for the water management system case study, and the Nuwejaars Wetlands Special Management Area was explored for the land management system case study.

The methods used within this research comprised of conducting a literature study, as well as conducting interviews with various participants from each of the conservation areas involved. It was discovered that the Cape West Coast biosphere reserve functions as a non-governmental organisation with numerous exchangeable stakeholders. The Breede-Overberg catchment management agency is government orientated with the South African government as the main stakeholder. The Nuwejaars Wetlands special management area was established as being a private organisation with a Land-Owners Association.

Research designs used include the evaluation research design and conceptual analysis design. The results of the study showed that conservation areas within

South Africa need to implement more co-management, increase awareness within public and organisations' spheres, increase institutional development, and implement more strategic partnerships in terms of stakeholder engagement with specific focus on private sector engagement. Tourism and sustainable scenario planning have also been proven to increase the benefits of collaboration, cooperation and co-management within each of the three conservation areas.

With the emerging trend of environmental sustainability and popularity increasing in conservation, individuals on a global scale have become progressively more aware of the problems facing environmental conservation areas. It is imperative that a conservation area implements strategic collaborative resource management practices which best suit the type of organisation, whether it is state-run, privately run, or a non-governmental organisation. The best possible recommendation found was that it is in a conservation area's best interest to find the right combination of solutions which work for a specific area instead of trying to implement a new, singular solution.

OPSOMMING

Besighede, organisasies en gemeenskappe word al meer omgewingsbewus en dus is die bestuur van die omgewing van meer belang. Bewaringsgebiede is onder 'n beduidende hoeveelheid druk vanaf belanghebbendes om doeltreffende samewerking en mede-bestuur strategieë te lewer. In die verlede was sulke gebiede onder-ontwikkel en gefragmenteer. Bewaringsgebiede is nou besig om in gedesentraliseerde, self-regulerende en holistiese gebiede te word. Voorheen is openbare betrokkenheid ontmoedig, maar die fokus het nou verskuif en die regering se fokus is nou op openbare entiteite wat kan help met die verskaffing van beloofde dienslewering aan bewaringsgebiede.

Bewaringsgebiede bestaan uit 'n verskeidenheid van ekosisteme wat versprei is oor die hele Suid-Afrika. Hierdie navorsingsprojek fokus op drie verskillende bewaringsareas. Die doel hiervan is om verskillende bestuurstelsels te vergelyk oor alle grense van bewaring in die konteks van internasionale gevallestudies, die Suid-Afrikaanse regering sowel as die mandaat van beleid wat reeds in plek is in die bewaringsgebiede. Daar word ook gepoog om die verskillende samewerkende benaderings tot vergelyk te bring deur die beoordeling van die bestuurs-metodes van elk van die gekose bewaringsgebiede. Die oorkoepelende doel is om die verskillende vlakke van belanghebbende betrokkenheid vas te stel, deur die vlakke van betrokkenheid tussen die mede-bestuurs gebiede en belanghebbendes te evalueer.

'n Biosfeer-reservaat, waterbestuurstelsel en landbestuurstelsel is bestudeer. In die geval van die biosfeer-reservaat gevallestudie is die Kaapse Weskus Biosfeer-reservaat ondersoek. Die Breede-Overberg Opvanggebied Bestuursagentskap is vir die waterstelsel gevallestudie bestudeer en die Nuwejaars Vleilande Spesiale Bestuursgebied was as bron vir die landbestuurstelsel gevallestudie gebruik.

Die metodes wat toegepas was in hierdie navorsing het bestaan uit die uitvoer van literatuurstudies asook onderhoude, in samewerking met 'n verkose deelnemer uit elk van die bogenoemde bewaringsgebiede wat betrokke is. Daar is vasgestel dat die Kaapse Weskus Biosfeer-reservaat funksioneer as 'n nie-regeringsorganisasie met verskeie uitruilbare belanghebbendes. Die Breede-Overberg Opvanggebied Bestuursagentskap is regerings georiënteerd met die Suid-Afrikaanse regering as die vernaamste belanghebbende. Die Nuwejaars Vleilande Spesiale Bestuursgebied is gevestig as 'n private organisasie met 'n Land-huiseienaars Vereniging.

Die navorsingsontwerpe wat toegepas was, sluit die evaluering van die navorsingsontwerp sowel as 'n konseptuele analise ontwerp in. Die resultate van die studie dui aan dat die bewaringsgebiede in Suid-Afrika: meer mede-bestuur moet implementeer; bewaringsbewustheid binne die openbare en organisasies se sfere moet vergroot; dat daar 'n verhoging in institusionele ontwikkeling nodig is en dat die implementering van meer strategiese vennootskappe in terme van betrokkenheid van belanghebbendes met spesifieke fokus op dat private sektor se betrokkenheid nodig is. 'n Toename in die voordele van samewerking sowel as mede-bestuur binne al drie bewaringsareas kan toegeskryf word aan toerisme en volhoubare scenario-beplanning.

Saam met die opkomende tendens van 'n toename in die populariteit van bewaring sowel as omgewings volhoubaarheid begin individue op 'n globale skaal meer bewus raak van die probleme wat die omgewings- en bewaringsgebiede in die gesig staar. Dit is noodsaaklik dat bewaringsgebiede strategieë implementeer wat samewerkende bestuur van die hulpbronne wat die beste pas by hulle tipe organisasie, of dit nou onder staatsbeheer is, privaat bestuur word of nie-regeringsorganisasies is, bevorder. Die beste moontlike aanbeveling was dat dit in 'n bewaringsgebied se beste belange is om die regte kombinasie oplossings te vind vir 'n spesifieke area, eerder as om te probeer om 'n nuwe, enkelvoud oplossing te implementeer.

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ANP –	Agulhas National Park
BHU –	Broad Habitat Units
BOCMA –	Breede-Overberg Catchment Management Agency
CAPE –	Cape Action Plan for People and the Environment
CEO –	Chief Executive Officer
CFR –	Cape Floristic Region
CIC –	CAPE Implementation Committee
CMA –	Catchment Management Agency
CMS –	Catchment Management Strategy
CONNEPP –	Consultative National Environmental Policy Process
CWCBR –	Cape West Coast Biosphere Reserve
DAFF –	Department of Agriculture, Fisheries and Forestry
DANIDA –	Royal Danish Government
DBSA –	Development Bank of Southern Africa
DEA –	Department of Environmental Affairs (from 2009)
DEAT –	Department of Environmental Affairs and Tourism (before 2009)
DED –	Department of Economic Development
DoT –	Department of Tourism
DWA –	Department of Water Affairs
EIP –	Environmental Implementation Plan
EMS –	Environmental Management System
ENGO –	Environmental Non-Governmental Organisation
ERC –	Eco-regional-based Conservation
FOA –	Food and Agricultural Organisation of the United Nations

GEF – Global Environmental Facility

IDP – Integrated Development Plan

IUCN – World Conservation Union

IWRM – Integrated Water Resources Management

LMA – Land Management Area

LOA – Land Owners Association

MAB – Man and the Biosphere

NBF – National Biodiversity Framework

NBSAP – National Biodiversity Strategy and Action Plan

NEMA – National Environmental Management Act (107 of 1998)

NEMBA – National Environmental Management Biodiversity Act

NGO – Non-governmental Organisation

NWA – National Water Act (36 of 1998)

NWSMA – Nuwejaars Wetlands Special Management Area

OECD – Organisation for Economic Co-Operation and Development

PEPA – Priority Environmental Projects for Access

PPP – Public-Private Partnerships

SA – South Africa

SAHRA – South African Heritage Resource Agency

SANBI – South African National Biodiversity Institute

SARS – South African Revenue Service

SMA – Special Management Area

TMF – Table Mountain Fund

UN – United Nations

UNCED – United Nations Conservation and Environmental Development

UNDP –	United Nations Development Programme
UNEP –	United Nations Environmental Programme
UNESCO –	United Nations Educational, Scientific and Cultural Organisation
WfW –	Working for Water
WMA –	Water Management Area
WWF –	World Wildlife Fund
WWF-SA –	World Wildlife Fund – South Africa

CHAPTER 1: INTRODUCTION

1.1. Introduction

Environmental management is a phrase that is becoming increasingly popular as organisations and communities alike are developing into environmentally friendly enthusiasts. Although many people are not entirely sure of everything that environmental management encompasses, the scare of global warming and heavily endangered ecosystems has everyone searching for information from whatever source they can access. Environmental management is a multifaceted concept including many different features and aspects. As there is not only one type of ecosystem or conservation area, the purpose of this study is to examine three different conservation areas in the Western Cape, South Africa. These three conservation systems are a biosphere reserve, a water management system, and a land management system.

1.2. Governance Paradigms

The South African state is a constitutional democracy consisting of a three-tire governmental system and has an independent judiciary. The three levels of government include the national, provincial and local levels which all have executive and legislative authority in their own spheres. The Constitution of the Republic of South Africa (RSA) (1996a) defines these three tiers as “distinctive, interdependent and interrelated” (RSA 1996a). Salamon (2002: 19) defines co-operative governance as “the evolution of devolved governance involving discussions, agreements and a combination of formal and informal regulation between industry, the public/stakeholders and government departments”.

It is necessary to define the concepts of co-management and biosphere reserves as they will be used extensively throughout this thesis. According to *Science-Dictionary* (2011), a biosphere reserve can be defined as “an environmentally sensitive area with protected status managed primarily to preserve natural ecological conditions”. *Green Bee* (2010) defines biosphere reserves as “world heritage sites identified by the International Union for Conservation of Nature (IUCN) as worthy of national park or wildlife refuge status because of high biological diversity of unique ecological features”. A biosphere may be defined as “the zone of air, land, and water at the surface of the earth that is occupied by organisms”. *The Glossary of Statistical Terms* (OECD 2001) defines co-management as “a process of management in which government shares power with resource users, with each given specific rights and responsibilities relating to information and decision making”. Cowling and Pressey (2003: 1) define a hotspot as “an area officially recognised for the huge diversification of a limited number of fauna and flora, and the consequent high compositional turnover along ecological and geographical gradients”.

Nel and Kotzé (2009: 7) state that the definition of environmental management "should be described as the planning, doing and checking the acting activities of managers and governing agents as they relate to... the environment". Within environmental management areas, there are always different stakeholders involved in different ways, which means that the approach to the environmentally protected area becomes either top-down or bottom-up. The different stakeholders involved in an environmentally protected area include the government, which is involved on a national, provincial and/or local level; the local communities surrounding the protected area; non-governmental organisations; and in many areas the private sector also plays a role. Algotsson (2009: 100) states "the National Environmental Management: Biodiversity Act (RSA 2004) (NEMBA) defines biodiversity as 'the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes biodiversity within species, between species and of ecosystems'".

The concepts of governance and paradigms will be discussed further in Chapter Three.

1.3. Conservation in South Africa

South Africa has an extremely colourful history of environmental conservation and management. According to Vollgraaff (2001: 112), within the sphere of natural conservation, public involvement has been limited as a consequence of racial and class divisions. Apartheid ended in 1994 and since then the South African government has been working tirelessly to reinstate conservation areas, with free access for all citizens and its structural systems of aid instead of only an elite few. The national, provincial and local bylaws and policies surrounding environmental management and conservation will be discussed below. For each of the co-management systems chosen, this study analyses the relevant legislation to cover each possible aspect pertaining to the challenges and complexities, and to integrate the various aspects that impact on each environmental system.

South Africa has a unique landscape in terms of diversity; it has wide climate variation ranging from deserts and subtropical forests to Mediterranean and temperate over a vast spatial area (Wynberg 2002: 223). Because of the variation in landscape and climate over South Africa, the country has one of the richest floral kingdoms in the world. The main biome found in the Western Cape Province is the fynbos biome. Other biomes include the savannah biome, the grassland biome, nama-karoo biome, the succulent-karoo biome, the desert biome, the forest biome, Indian Ocean coastal belt and Albany thicket biomes. Although the fynbos biome is the smallest one, it is the most diverse (Olivier *et al.* 2009: 346). There are approximately 459 biospheres world-wide, and 60 of these biospheres are situated in Africa. Of these 60 prominent biomes, there are seven prominent biomes in South Africa (*About the Biosphere* 2009). One of the main problems when it comes to biosphere reserves and nature conservation is the need for the relocation of people out of the area needed to be conserved, on the one hand, and their unwillingness to be relocated, on the other. Yet, one of the main concerns of biosphere reserves is the integration of people with the conservation area. This is a problem in that when communities inhabiting an area co-exist with endangered species of indigenous vegetation in that area, these endangered species of

vegetation are more likely to be wiped out than preserved. This often occurs when population numbers increase or building takes place in the area. Müller (2008b: 11) mentions that the Kogelberg Biosphere Reserve, while being established as the first biosphere hotspot in 1998, was initially run by a board of directors the public nominated. This helps to ensure public involvement in conservation protection, thus combining the factors which are endangered and those which cause the dangers together to become sustainable and promote effective management.

In every biosphere reserve or nature conservation area there are threats to the various species of plants and animals. Whether these threats are man-made or natural dangers, a biosphere will always face the danger of either being wiped out or exploited. There are of course many advantages to having one of UNESCO's approved biosphere hotspots in the Western Cape Province. Rabie (2005: 86) mentions some of the benefits of environmentally sound management. These include: "excellent recreational opportunities that attract tourists; the *fynbos* biome provides opportunities for specialised research; this unique environment regulates the flow of rainwater into the rivers and increases efficiency of water catchment and quality; it provides an income for the sale of flowers and plants; and lastly, the resources within the marine component have considerable economic value". Other general areas of conservation of specifically biosphere will also be scrutinised to enable comparison of management strategies, the differences in local community involvement and variation in the involvement of non-governmental organisations (NGOs). One such general area includes taking not of the cultural landscape – by this is meant the relationship between cultural influences in a specific area and nature – and how to manage ecological systems in accordance with the various cultural landscapes. According to Turpie (2003: 199), although South Africa is so rich in biodiversity, the country has no means to maintain and conserve the ecological regions.

Cater (1995: 21) mentions that economic activity cuts across many sectors, levels and interests, including environmentally-based attractions. Tourism activity places additional pressures on environmentally resources, yet each country needs tourism as it brings in foreign currency and tourism organisations are in turn formed thus creating jobs. It is necessary to create more positive links to tourism and the environment. Trade-offs will have to be made between developmental and conservational goals so that a win-win scenario can be created. This will be discussed further below.

An important aspect to be borne in mind when examining a biosphere reserve is the policies and legislation encompassing the natural protected areas. Environmental governance and environmental management are two concepts which go hand in hand when it comes to conserving the environment for the communities to benefit from the natural resources. Nel and Kotzé (2009: 17) state that the public sector involvement with environmental management is naturally and innately multifaceted as well as complicated. For a biosphere reserve, it would be appropriate to examine conservation policies on national, provincial and local level, while tying in the concept of environmental management. An example of such a policy would be the NEMBA (Act 10 of 2004). An especially important Act

to discuss at a later stage would be the National Environmental Management Act 107 of 1998 (NEMA).

The City of Cape Town has set out the well-known strategy called the Cape Action Plan for People and Environment (CAPE). This is a long-term strategy set in motion for the conservation of biodiversity of terrestrial, marine and freshwater ecosystems of the Cape Floristic Region (CFR). According to the City of Cape Town Strategic Plan (City of Cape Town 2009), the City of Cape Town still needs to find an equal "balance between environmental protection and the ongoing economic and social development needs for a growing population". The City of Cape Town has a Local Action Plan for Biodiversity Plan in motion which is committed to sustaining the natural biodiversity and conserving the environment in a sustainable way for future generations (City of Cape Town 2003: 3).

The biosphere reserve chosen for assessment here is the Cape West Coast biosphere reserve. The reserve is situated in the Western Cape Province of South Africa along the coastal zone north of Cape Town (UNESCO 2005). According to *Cape Biosphere* (2009) the Cape West Coast is the only biosphere which has a nuclear power station, oil refinery and a toxic dump site on it or nearby. Also, it is the only biosphere which encompasses a city boundary. Because of the wide range of biodiversity within this area, it is more popularly known as a "hot-spot". The area also supports and includes a Ramsar site with a deep-sea harbour (Langebaan lagoon and Saldannah Bay) as well as Dassen Island. This island supports one of only two breeding sites for Pelicans in the country. It also supports a penguin colony. The total area covered by this biosphere reserve is estimated at around 378 240 hectares (UNESCO 2005).

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005), the reserve was founded in 2000 with an extension added to the reserve in 2003. The major type of ecosystems this area supports includes coastal plains, marine-influenced fynbos areas, rocky islets, marine areas, and wetlands. Currently, the number of people living in the biosphere reserve consist roughly of 132 000 permanent residents, while non-permanent residents are roughly estimated to number 161 000 people who come in from elsewhere for holidays and weekends. The largest sectors to provide employment in this area are the agriculture and fishing industries. The area is known to have an excellent climate with lower rainfall and warmer winters than the Cape Town area, and because of proximity to the Atlantic Ocean, cooler summers are experienced. According to *Cape Biosphere* (2009) the Cape West Coast biosphere reserve (CWCBR) is the only biosphere run by elected volunteers. Other biosphere reserves are generally run by state employees making the area a publicly run entity rather than a non-governmental entity. The main aim and objectives of the CWCBR include fostering human development that is ecologically sustainable; conserving the landscapes; vegetation and species of the West Coast; and lending support for research, monitoring, education, and information exchange related to local, national and global issues of conservation and development.

1.4. Water Management in South Africa

In order to assess a water management system, one first of all needs to explain what is meant by water quality and management. Water quality is a phrase used to describe the physical components that make up water. The chemical and biological characteristics of water are essential as well. The main reason for classifying water into categories, is to check whether the quality of the water is good or bad – depending on the intended usage – for example if people wanted water to drink, they would expect the quality to be pure and contamination free. On the other hand, if a person was washing their car they would be less worried about the quality of water. Humans contribute extensively to the pollution of rivers and dams with runoff from commercial farming and municipal and mine effluent discharges. Water with chemicals from farming or rural communities can not only damage the natural components of the water, but also completely destroy the natural ecosystem within the water management area (Turpie *et al.* 2002: 191). Various ways of polluting water include natural and man-made sources: salination (which can be natural or man-induced); eutrophication; micro-pollutants, which is water contaminated by faecal matter which in turn spreads cholera and typhoid; and erosion and sedimentation.

Conservation of water is a fundamental requirement in any country, but has specific urgency in developing countries such as South Africa which have to rely on other countries, such as Lesotho (i.e. Lesotho Highlands Water Project) to supply the country with clean and usable water. Although South Africa has been found to have various catchment areas both natural and man-made, the dams are large in surface area yet shallow allowing for a great deal of evaporation to take place. Alien plants also play a significantly negative role in water management systems as they tend to over-populate the dams and rivers causing the water management system to become congested (Abell *et al.* 2007: 48). Freshwater management systems are of fundamental importance in South Africa and the management systems in place are required to redouble the efforts of conservation as they have been found to be severely lacking in managerial skills and policy implementation processes. Out of the three co-management systems that will be assessed in this research thesis, water management systems are the least protected but yet are the most important and vital to many livelihoods, especially to rural communities.

According to Richter *et al.* (2003: 206), there is an ecologically sustainable process to water management, which consists of six steps:

1. Estimating ecosystem flow requirements – includes developing preliminary numerical approximations of key features of river flow required to maintain native species and natural ecosystem functions;
2. Determining human influences on the flow regime – accounts for water via human usage in current aspects as well as long-term aspects;
3. Identifying compatibilities between human and ecosystem needs – focuses on the incompatibilities in addition to compatibilities, and pays specific attention to the temporal and spatial characteristics;
4. Collaboratively searching for solutions – involves collaborative investigation for solutions to sort out incompatibilities;

5. Conducting water management experiments – is in order to solve crises around water distributions, and to solve critical uncertainties;
6. Designing and implementing an adaptive water management plan – in order to facilitate ecologically sustainable water management in the long run (Richter *et al.* 2003: 206 – 224).

The various threats proposed to water management systems include direct habitat alteration resulting in degradation and loss of aquatic diversity. Fragmentation by dams and unwelcoming habitat sediments have also been implicated. Abell *et al.* (2007: 49) proposed a simple solution of local-to-catchment management protection as well as protecting the rivers themselves or the river reaches. Flow alteration caused by dams, land-use changes and water abstractions are a further threat. Abell *et al.* (2007: 49) propose a place based solution for catchment management and that abstraction should be prohibited or managed for priority systems. Other problem areas include overharvesting, contaminants (pollutants from industrial areas such as mines), invasive species, and climate change.

There are a number of legislative frameworks for water management conservation, namely: Agenda 21 (which is a comprehensive plan of action to be taken globally, nationally and locally by organisations of United Nations system, governments and major groups in every area); the Constitution of RSA (Act No. 108 of 1996a); National Environmental Management Act (No. 107 of 1998a); and the National Water Act (No. 36 of 1998b). Wellmann (2008: 1) mentions that a decade after the 1997 White paper on Water policy, it was found that the distribution of water was still unequal throughout all classes of people including gender. Often most ecosystems are poorly managed and rely on a decision support system of evaluation for management opportunities. The South African government has taken gigantic leaps in the development process for conservation; an example of this can be seen in the Department of Water Affairs (DWA). Groundwater monitoring is discussed extensively, as South Africa needs all the natural sources of water it can find. Although the stronger side of South Africa's natural resources lie more in the mining of natural minerals field, this field tends to be one of the main sources of pollutants for underground freshwater systems.

The South African Government has put forth legislation relating to terrestrial mining in order to curb polluting underground resources. Management and water allocation decisions often involve trade-offs between conservation and various types of utilisation. This is due to the fact that the future of health and productivity of water management systems in South Africa is largely dependent on management and fresh water inputs (Turpie *et al.* 2002: 191). Biodiversity importance has a high-ranking level in conservation management as it falls into all aspects of conservation whether it is biospheres, water management systems, coastal or marine systems, or land management systems. Humanity often does not realise that sometimes by trying to rectify the environment they often tend to destroy it further. An example of this is creating or building dams in rivers. This affects lower level catchment areas which tend to decline with the sudden lack of water, while rural communities who survive of the river for water or food become severely undervalued and ill-compensated by government for the sudden lack of biodiversity and the loss thereof. Another factor is diverting a river for farming purposes, this leads to loss of water, generalisation by government to provide solutions, and loss.

The second area selected was that of a water management system – the Breede water management area. Fresh water systems are exceptionally significant in South Africa as it does not have an abundance of natural freshwater systems. King *et al.* (2009: 435) mention that water is the most essential component of life and living organisms. It is the most essential of all natural resources. The Breede River is the largest river in the Western Cape and provides for a large number of people in terms of supporting activities, economic benefits as well as tourism potential. The Breede River has a total catchment area of 12 600 square kilometres. The river is situated on the east coast and comprises seven drainage basins. It is situated roughly 250km from Cape Town and originates in the Ceres Valley. The National Water Resource Strategy (2004b) from the DWA states "the Breede water management area is the southern-most water management area in South Africa and lies entirely in the Western Cape Province. The climate in the area varies considerably. In the western mountainous regions rainfall can exceed 1 500mm/a, while in the lower eastern parts of the area the rainfall decreases to about 300mm/a. Rainfall occurs during the winter. The greater part of the water management area is drained by the Breede River and its main tributary, the Riviersonderend River. Several smaller coastal rivers drain the southern part of the water management area, while vleis with no outflow to the sea are found in the south-east. The lower Palmiet River and the vlei areas are of high conservation importance".

Steynor *et al.* (2009) discuss the study area of the Breede River, tying in with the previous paragraph that climate in the area varies noticeably. The area receives winter rainfall brought about by mid-latitude cyclones. The topography of the Breede water management area is characterised by mountain ranges in the north and west, the wide Breede River valley, and the rolling hills of the Overberg. The Breede valley is flanked by the Franschhoek and Du Toit's Mountains in the west, the Hex River Mountains to the north and the Langeberg Mountains in the east. The higher peaks reach an altitude of 1500m – 2000m (DWA 2002). The western mountain areas' rainfall can be as high as 2 300mm/a (Steynor *et al.* 2009: 2). According to the Breede River Conservancy (2007) the Breede River is 293km long and has 58 tributaries and 14 major dams in the system as well as a high level of biodiversity. Regarding wetlands and freshwater ecosystems, the City of Cape Town supports a vast variety of wetlands and rivers. The Western Province relies on winter rainfall to raise the water tables for groundwater systems.

1.5. Land Management in South Africa

For a basic outline, the research will first focus on the history of the Nuwejaars Wetland area and the history behind the CAPE. The land uses of the Nuwejaars Wetland will then be focused on, and then the discussion will move on to consider the soil with regards to its components and degradation. This will be followed by a comprehensive study of the CAPE and other governmental legislative frameworks, proceeded by stakeholder involvement in the land management system and an examination and discussion of National Biodiversity Strategy and Action Plan, which falls under part of the Department of Environmental Affairs (DEA). This is then followed by a discussion on the costs of biodiversity, the strategic plan for the CFR and the funding behind it, the management plans and the implementation

of government objectives. It is then necessary to briefly take into consideration pollution, access of the conservation area to the local surrounding population, and human influences on the land management system will need to be evaluated, as will the land evaluation techniques themselves. Conservation strategies and quality management control are essential to all biosphere reserves and thus need to be monitored in a land management system as well.

Land ownership and the struggles behind owning land before and after 1994 need to be discussed as part of the history of South Africa as these factors determine local community willingness to participate in sustainable development and management systems for conservation. Land degradation and the problems associated with poverty will also be discussed, as well as broad habitat units (BHUs). All these factors will need to be assessed on a short- as well as long-term scale to be able to calculate the usefulness of the area, where the area is heading in terms of conservation and sustainable development, how the various stakeholders are involved, and how they should have become more or less involved and on what level. Important aspects when dealing with land management systems are land usage, the conservation and biological components of the land, the make-up which composes of soil components and the classifications of particles, organisms, chemicals and soil degradation as well as erosion.

Wetlands in South Africa are more commonly known as “vleis”. They are important areas as they help to eradicate pollution and support water recharge. Various projects surrounding wetlands within South Africa include” Working for Water (WfW), working for Wetlands, South African Crane Working Group and Mondi Wetlands Project (DWA 2004a: 20) The reason wetlands are important in terms of helping to eradicate pollution, is that they improve water quality by trapping sediments, nutrients and disease causing bacteria by acting as filters. Heavy metals and harsh chemicals are also trapped by means of the chemical and biological processes which take place in these wetlands. Therefore, water leaving wetland areas is often found to be leaner than water entering the wetland (King *et al.* 2009: 430).

The history of the CFR is known to be colourful as well as eventful. The realisation that the area needed to be conserved occurred in the early 1990s (Cowling and Pressey 2003: 1). In the mid- to late 1990 conservation became increasingly important as the South African government became aware that the CFR faced a significant number of threats to its biodiversity. Because of this, the CFR became known as a hotspot for conservation. The South African government’s budget was steadily decreasing for a decade before comprehensive information about the threats to biodiversity in the CFR was made known. Due to the change of political parties in 1994, when apartheid ended, the newly installed democratic government of South Africa sought to access international donor opportunities in order to take conservation action (Cowling and Pressey 2003: 1). According to the United Nations Environmental Programme (UNEP) (UNESCO 2005) and the World Conservation Monitoring Centre, the CFR is one of the twenty-five world areas designated by Conservation International as a conservation hotspot for biodiversity.

Complete, all-inclusive and wide-ranging conservation was needed with sensible, reasonable, practical, successful and effective implementation in order to take conservation action. CAPE was created because of this necessity. According to Cowling and Pressey (2003: 2), CAPE sought to, firstly, identify and establish a representative system of conservation areas; secondly, ensure sustainable yields from biodiversity-based resources; and finally, to improve conservation-related policies and legislation and strengthen the capacity to implement them. APE was mainly able to be developed as a result of Global Environmental Facilities. This is the initial strategic plan which is continuing indefinitely which seeks to involve all stakeholders, such as the public sector, all levels of government (national, provincial and local), the private sector along with NGOs, and the community. CAPE set out guidelines for the management of ecoregional conservation planning as well as glancing at a multidisciplinary conservation strategy. Along with discussing the CAPE in extensive detail while assessing the CFR, the international context for sustainable ecoregional biodiversity conservation management will then be examined. According to Younge and Fowkes (2003: 16), public involvement is essential in CAPE and in order to utilise public involvement, human behaviour needs to be understood with regards to the environment. Younge and Fowkes (2003: 21-22) note key biophysical aspects regarding environmental degradation and the socio-economic causes behind it, as well as making key recommendations for different areas.

One of the debates which need to be discussed regarding the CFR and CAPE is which approach – top-down or bottom-up – is best for the conservation area as well as what is best for the inhabitants of that area. Conservation areas are open to the public and attractions such as small museums, restaurants, tour guides, picnic areas, educational centres and endangered wildlife and plant exhibits attract the public as well as school tour groups and researchers. Conservation areas often attract tourists, and although they are allocated funds in the South African budget, operating costs need to be calculated effectively and efficiently. As with the previously mentioned co-management systems, land management systems have effective governmental legislative frameworks implemented to help local communities become involved. Public sectors take an interest in conservation, private sector sponsorship and help public-private partnerships (PPPs) by working communally on projects.

According to Verster *et al*. (2009: 294), approximately 80 to 85% of the land in South Africa is dedicated to agricultural practices. The livelihoods of many people in the country depend on these agricultural practices for jobs and food. As a result of unsatisfactory farming practices and poor management of soils, it is increasingly found that the soil in South Africa is steadily declining in terms of quality and productivity. Because biodiversity is such an important factor in the country and because the country cannot survive without soil, soil degradation becomes even more of an important issue to review. It is not only the land-use practices which are leading to soil degradation; it is also the chemical components which are declining. Soil nutrients and minerals are lost, but biological degradation as a result of alien plant invasion is also becoming increasingly problematic.

Frazee *et al.* (2003: 275) states that "the lack of realistic estimates of the costs of protected area establishment and effective management can hinder conservation planning and result in under-funded 'paper parks' that fail to meet conservation goals". In order to formulate an effective strategic plan for biodiversity conservation in the CFR, the current strategic plan needs to be evaluated, assessed and weighed up with respect to its strengths and weaknesses to see which management plans work and which do not. Since the concept of climate change has come to foreground, the world population has become increasingly aware of the need for environmental conservation. What many people do not immediately realise is that climate change is basically the aggravation of weather formations, such as floods, droughts and heat-waves. These will occur more and more gradually, and changes can be noted in temperature and precipitation. What many people need to realise is that the areas around the conservation sites need to be taken care of as well. Instead of just taking not of the short-term implications, the long-term consequences seem almost more important, as it is future generation which will have to live in the environment which the generation of today has mostly destroyed.

The topic of land and land tenure is somewhat of a contentious subject in South Africa and the surrounding countries, such as Zimbabwe. The wrongs of the past are difficult to correct now, when so much history has had an impact on the situation. Poverty problems are often noted and come to light from this debate. Some areas which used to belong to people before they were taken away by the previous regime are now conservation land. Returning that land would cause a significant problem for the environment. According to Bradstock (2006: 247), the extent to which the South African government's land reform programme might find a way out of poverty for its beneficiaries by returning land remains to be seen. Land which has now been converted into protected conservation areas cannot simply be converted back to agricultural tenure. Thus the South African government has encountered severe problems concerning the land of conservation areas and the government's land reform programme.

Strydom and King (2009: 951) state that "in the twenty-first century, the identification, establishment, legal regulation, conservation and management of ecologically viable areas have become closely linked to the conservation of biological diversity and to achieving the United Nations Millennium Development Goals. In this sense, protected areas are no longer an end in themselves, but a means to improving human wellbeing, poverty reduction and sustainable livelihoods". The *Seville Strategy for Biosphere Reserves* suggests four goals for biosphere regions:

1. Use biosphere reserves to conserve natural and cultural diversity;
2. Utilise biosphere reserves as models of land management and of approaches to sustainable development;
3. Use biosphere reserves for research, monitoring, evaluation, and training;
4. Implement the biosphere reserve concept (in the community).

The third area of conservation co-management which was selected for this study consists of a land management system. The area selected is the CFR, with a specific focus on the Nuwejaars Wetlands Special Management Area (NWSMA). This area also involves CAPE. The debate on climate change has been intense and furious for the past decade, and as each of the co-management systems that will be examined here can and are affected by climate change, it makes sense to review the possible causes of climate change and the effects it will have on biosphere reserves, water management systems, and land management systems. The reason for stating that climate change has been such a contentious discussion is that scientists are for and against the concept of climate change, while many more “sit on the fence”, unwilling or unable to chose sides. The CFR covers a range of 87 892 square kilometres and is situated on the southern tip of South Africa.

The NWSMA is defined as “an area of excellence and good practice where the ethos of sustainable development is served in practice” (Dennis Moss Partnership Inc. 2005: 1). It is further described as “a cadastral geographical unit, which is formally recognised and managed as an area where environmental sustainability is promoted in practice and in accordance with international standards for environmental sustainability” (Dennis Moss Partnership Inc. 2005: 1). The goals and objectives for the special management area (SMA) include restoring the wetlands and associated natural habitats within the area; promoting the sustainable use of the biodiversity products of the wetlands and associated natural habitats; promoting the diversification of the uses of the wetlands; promoting all forms of agriculture in a sustainable way’ and promoting the well-being of the local community within and surrounding the SMA (Dennis Moss Partnership Inc. 2005: 2).

Development and growth take time to manifest and produce results, yet as far as conservation and biodiversity are concerned there is simply no time to wait. Conservation is one of the aspects of the country which needs immediate attention because of the problems and condition of these areas. What this research proposes to find out is what the South African government has done so far in terms of setting up legislative frameworks and implementation of these policies, as well as how local communities surrounding the conservation areas help promote and protect the areas. This research would also like to establish how the public and private sectors work together for conservation purposes and how well NOGs become involved to help encourage and support, as well as conserve and maintain, the areas on which people place so much value in the Western Cape.

One of the important legislative frameworks which will be examined extensively is the National Biodiversity Strategy and Action Plan (NBSAP). The development and implementation of this plan, as all plans, is on-going and in progress as it is being constantly developed and changed to suit the surrounding conditions and needs of the respective communities. The National Biodiversity Framework needs to be viewed as a continual cycle of implementation, monitoring, review and revision. The NBSAP falls under the DEA, who have done assessments on terrestrial areas as well as freshwater and marine areas. The freshwater assessment is a long-term project, which was in its early stages in 2004. The reason for these assessments

was to capture data and determine the level of protection these areas needed and to observe whether the protection they are already receiving is adequate. Other legislative frameworks include the Constitution of RSA (1996a), Conservation of Agricultural Resources Act (RSA 1983), the National Water Act (RSA 1998b), and the National Environmental Management: Biodiversity Act 10 (RSA 2004). Other legislative frameworks will also be reviewed.

1.6. Research Aims and Objectives

The purpose of this study is to compare different collaborative approaches by describing and assessing the managerial methods in each organisation within the chosen conservation area. The overall purpose is to achieve the following specific objective: to assess and describe the various levels of stakeholder involvement by evaluating the levels of participation between the co-management personnel within the conservation areas and the stakeholders. These various stakeholders include the South African government, various NGOs and local surrounding communities. The objective is to identify policies and legislation specified by the South African government regarding biodiversity and conservation management, while determining what sort of value government places on the three proposed conservation areas. The objective is to ascertain types of contributions that NGOs and local communities promote and provide for the three organisations within the conservation areas.

1.7. Research Design and Methodology

1.7.1. Design: Evaluation Research: Implementation (process) evaluation

The aim of this design is to determine whether an intervention has been adequately implemented. It is important to show whether the target group has been sufficiently covered and if the intervention was implemented as designed (Mouton 2001: 158). The design is qualitative and empirical, and uses a combination of qualitative and statistical methods of analysis. Multiple methods of data collection were implemented which included questionnaires and interviews.

1.7.2. Implementation Evaluation Methodology

The research entails conducting interviews and questionnaires with the various participants within the conservation areas to determine the outcome of these conservation management plans and their impact on the ecosystems as well as whether they improve or worsen the current situation the conservation areas are in. The process which will be followed is first to examine the theoretical framework for the conservation areas discovered within the literature, and then to evaluate the situations established therein. This will then be followed by interviews and internet surveys, as well as consultations, and a comparison of the theoretical frameworks derived from the research literature with the information obtained from the conducted interviews and surveys.

1.7.3. Design: Conceptual Analysis

The design of conceptual analysis was chosen because of its relevance to the theoretical framework focus of the conservation areas in Chapter Four. This design is classified as non-empirical and qualitative. The aim of the study requires extensive research on the theoretical framework to discover which various stakeholders have previously implemented managerial systems. The theoretical framework is also going to be used to investigate the involvement of the stakeholders in the three conservation areas. The aim is to research extensive theoretical frameworks to observe what types of managerial systems exist, as well as how and where they have been implemented and how they work.

1.7.4. Conceptual Analysis Methodology

The means necessary to carry out this design is to consult search engins as well as conduct research in the library and search journal articles and the Internet for information. This will entail searching various journals, newspapers and Internet sites with the main key words: government, non-governmental organisations, community, land management, water management, conservation, ecosystems, biodiversity, policy and legislation.

1.8. Time Frame

The research was conducted over a period of 18 months from 2010 – 2011.

1.9. Chapter Outline

The proposed chapter outline is:

- Chapter 1 – Introduction
- Chapter 2 – Collaborative environmental governance on an international level
- Chapter 3 – Policy and institutional framework for environmental governance in South Africa
- Chapter 4 – Case studies of collaborative environmental governance in the Western Cape
- Chapter 5 – Research findings
- Chapter 6 – Recommendations and conclusions
- Bibliography
- Appendices

CHAPTER 2: COLLABORATIVE ENVIRONMENTAL GOVERNANCE ON AN INTERNATIONAL LEVEL

2.1. Introduction

Modern society tends to be fragmented, incoherent and complex in nature. This is partly because governments on a global scale are finding themselves limited in certain aspects, namely natural resource management and the coordination of public involvement, no name just two. According to Müller (2009: 68), traditional governance mechanisms have become destabilised in recent decades as a result of the reality of environmental factors such as climate change, water management and losses in biodiversity. Müller (2008b: 6) also mentions that environmental problems are often described as bad but are often avoided as they are found to be complex in nature and governments find it exceedingly difficult to deal with them. The following aims will be addressed in this chapter:

(i) The primary aim and purpose of this chapter is to focus on collaborative environmental governance and to determine where the problems originate and are located.
(ii) To discuss the roles of the various stakeholders in the co-management of collaborative environmental governance.
(iii) To examine the framework devised by Müller (2007a) for the assessment of environmental governance structures.
(iv) To consider and examine the evaluation approaches for collaborative conservation and how they relate and contribute to collaborative environmental governance, as described by Conley and Moote (2003).

Throughout the chapter the work of various authors will be examined and ascertain what each one has to contribute on the subject of collaborative environmental governance. In this chapter, environmental management of natural resources controlled by the various stakeholders will be addressed.

2.2. The Problem

Collaborative natural resource management, or co-management, is a term which many authors have attempted to define. In relation to natural resources, the term management can be understood as the right to control or adjust the internal use patterns and make improvements by transforming the resource (Ostrom and Schlager 1996: 131, as cited in Carlsson and Berkes 2005: 66).

Heikkila and Gerlak (2005: 583) define collaborative resource management as “a group of diverse stakeholders, including resource users and government agencies, working together to resolve shared dilemmas”. Heikkila and Gerlak (2005: 583) further mention that centralised institutions are starting to become a background option to collaborative research management for the management of natural resources, as this type of institution is becoming progressively more accepted. Heikkila and Gerlak (2005: 605) further state that “we expected that in order to ensure that diverse stakeholders and/or resource users would collectively see the benefits of collaborating in large-scale settings, information and awareness about

the existence of the problem and affected parties should be abundant and relatively widespread".

Conley and Moote (2003: 371-2) have a different definition of collaborative resource management to that of Heikkila and Gerlak (2005). Conley and Moote (2003: 371-2) mention that complex and controversial natural resource issues are currently being dealt with through collaborative approaches to natural resource management and are being promoted as promising ways to deal with these types of issues effectively and efficiently. Conley and Moote (2003: 372) mention that many terms have been invented to describe and explain the concept of collaborative resource management. Collaborative efforts have been referred to as "partnerships, consensus groups, community-based collaborative, and alternative problem-solving efforts" (Conley and Moote 2003: 372). Collaborative approaches to natural resource management include: "watershed management, collaborative conservation, community forestry, community-based conservation, community-based ecosystem management, grass-roots ecosystem management, integrated environmental management, and community-based environmental protection.

Co-management, or collaborative management, has many different definitions. Four particular definitions of co-management come from Carlsson and Berkes (2005: 66). The first of these is that "collaborative management, or co-management, has been defined as the sharing of power and responsibility between the government and local resource users". The second of these is com-management defined as "the term given to governance systems that combine state control with local, decentralised decision making and accountability and which, ideally, combine the strengths and mitigate the weaknesses of each". The third definition comes from the World Bank (1999: 11), as cited in Carlsson and Berkes (2005: 66) "the sharing of responsibilities, rights and duties between the primary stakeholders, in particular, local communities and the nation state; a decentralised approach to decision making process as equals with the nation-state". The fourth and final definition comes from the World Conservation Congress, as cited in Carlsson and Berkes (2005: 66) "a partnership in which government agencies, local communities and resource users, NGOs and other stakeholders negotiate, as appropriate to each contest, the authority and responsibility for the management of a specific area or setting of resources".

Numerous scholars have explored the positive and negative aspects of collaborative resource management, for example, its ability to enhance social capital, its capacity to adapt t the altering physical conditions of resources, and to promote public participation and policy dialogue. According to Müller (2008b), collaborative environmental management was considered an emerging trend. Collaborative environmental management has long been observed and recently been noted as a divided institution, because the lack of coordination amongst the various stakeholders, or agencies, represents a significant barrier to its implementation and success. On an international scale, many countries have now adopted the notion of co-management in order to resolve the conflict around resource allocation and in order to build successful, working partnerships between government stakeholders and local actors for the conservation and management of these resources. The challenges presented today are complex and of great

magnitude. Collaborative environmental management has now become the leading paradigm for addressing complex environmental issues throughout the world. Natural resource management is no longer a side focus of various stakeholders, but has become a foregrounded and central focal point.

Environmental conservation is a global principle for all countries. Because of the emerging climate change and global warming, countries are becoming more aware of the threat human beings are posing to the environment. As the environment cannot restore itself immediately, it is essential for communities to conserve and protect areas in danger. According to Wijen and Zoeteman (2005), the Kyoto Protocol, which was designed and formulated in 1997, addresses human-induced climate change. The Protocol is one of the most significant and prominent global environmental agreements. Climate change is one of the most significant problems and one that does not have an easy solution. This makes climate change all the more important to address and reduce as matter of urgency. It is because of climate change that environmental conservation becomes increasingly crucial as time passes. Participation of the community is essential for future climate change policies.

Many organisations have found the management and sustainability of natural resources challenging as allocation is not always equal or fairly managed. Collaborative resource management needs to be sustained in such a way that each stakeholder, organisation, and individual receives its allocation according to its needs without sustaining damage to the environment or destroying the resources completely. However, this is much easier to state than to carry out. For many years countries which are more developed than others, the First World countries, have caused resource damage to the less developed countries. Not only did this hinder the development of the less developed countries, but it also set them back on their development path as well. Natural resources are still a problem in the twenty-first century as now the more developed countries with more money are in a position to buy the natural resources from the less developed countries leaving them with a monetary value but still underdeveloped. This can also be attributed to the fact that in all countries people in power tend to become greedy and keep the money instead of allocating it where it is due. Thus the poor remain poor, while those in power grow richer. This is one of the many problems developing from a lack of management in natural resources, and a lack of sustainability within these resources causes a state to decay (Lor and Van As 2002; Blamford *et al.* 2002: 111).

What was once considered an emerging trend has now become a leading paradigm for addressing complex environmental issues throughout the world (Moffat and Auer 2006: 592). Several bodies of work surrounding collaborative environmental management, according to Müller (2008b: 7), highlight a number of important characteristics. These would include, firstly, involving a wide range of stakeholders; secondly, engaging the participants in an intensive and creative process of consensus building; thirdly, working to achieve agreement on problems, goals and proposed actions; and lastly, a sustained commitment to problem solving. Organisations are trying to move towards a more open and collaborative environmental management supportive state. If fragmentation is the problem, the

quest for integration should be at the core of sustainable development and environmental management implementation issues. Environmental sustainability requires effective integrated environmental management, which in turn requires creativity, knowledge, imagination and innovation (Müller 2008b: 7).

There are various stages to collaboration, according to Selin and Chavez (1994: 35), the first development of which is problem setting, followed by direction setting. Structuring is the third stage, followed by outcomes to illustrate various aspects such as the interactive and cyclical nature of collaboration. One of the main aspects that hinder collaboration is significant power differences between the various stakeholders or parties, or when bad decisions are made or carried out ineffectively. Conflict is a common problem within collaborative relationships. Selin and Chavez (1994: 41) conclude that in the world today, as economic interdependencies are becoming more pronounced, collaboration is starting to occupy a more important and central role. Heikkila and Gerlak (2005: 607) state that one of the most important components of collaboration is information.

It is against this background that the notion of co-management of natural resources has emerged in many countries around the world as the most promising institutional prospect for resolving resource conflicts and building partnerships in conservation and management between local actors and government authorities. In order to be able to determine the problem with greater clarity, the involvement of the various stakeholders need to be examined. This would include the organisations striving to achieve collaborative environmental management, as well as the organisations striving to conserve and make natural resources sustainable for all.

2.3. Stakeholders and Co-management

The capability for stakeholder integration involves the ability to establish collaborative relationships with a wide range of stakeholders. This especially applies to those with non-economic goals on their agendas. These stakeholders may include local communities, environmental groups, NGOs, regulators, the public sector, and so forth (Sharma and Vredenburg 1998; Price 1994: 50).

According to Chase *et al.* (2000: 208) stakeholders have sought for more involvement in the environmental management sector over recent years. As stakeholder involvement is essential in co-management, it is necessary to look at the complexities surrounding the conceptualisations of co-management. There are seven factors which contribute to defining co-management in its complexity, variation and dynamic nature with regards to contemporary systems of governance. The first of these is the complexities of the state, the second complexities of the community; the third, complexities of the dynamic and iterative nature of the system; the fourth, complexities of the conditions available to support the system; the fifth, complexities of co-management as a governance system; the sixth, complexities as a process of adaptive learning and problem

solving; and finally, complexities of the ecosystem that provides the resources that are being managed (Carlson and Berkes 2005: 67).

Sarkis *et al.* (2010: 163) mention that training is an important function and resource when building the necessary capacity in co-management of the environment. Stakeholders often promote and motivate organisations to adopt the necessary environmental practices. By doing so, and utilising these proactive environmental practices, companies are then able to shape the type and manner of collaborative relationships with the government, while exploring a more non-regulatory way in which the government can then encourage greater environmental developments and change for the better. Human and Davies (2010: 645) conclude that using an alternative means of looking at stakeholder involvement, namely the "bottom-up" approach to environmental management, or collaborative planning is seen to be more successful and effective for the stakeholders. This bottom-up method allows stakeholders to deliver services promised, as well as giving them a sense of meaning and purpose.

According to Sharma and Vredenburg (1998: 735), stakeholder integration is an important aspect when looking at capacity building as this involves the ability to establish trust-based collaborative relationships with various stakeholders as well including environmental groups, local communities, and NGOs, among others. When examining stakeholder integration it is also important to examine the level of participation as well as the two tend to be discussed together. This is because stakeholders need to participate effectively in order to carry out their collective communal goals.

Buttel and Flinn (1976: 477) mention that there are two components of mass environmental beliefs, namely awareness of environmental problems and support for environmental reform. There is no "natural" political constituency attached to environmentalism mainly because the nature of environmental goals is general and broad. Buttel and Flinn (1976: 477) further mention that both private individuals and "corporate individuals constituting the rational individual", created a social problem which the environmental movement sought to resolve with the utilisation of common property resources. In the late 1960s environmentalism surfaced, moving from voluntary association origins, which were somewhat incomprehensible, into a significant mass movement. Corporations in most industrialised nations such as Japan, Europe and North America have begun accepting and implementing environmental protection policies within their international competitive plans and policies (Berry and Rondinelli 1998: 38). According to Balkau (2005: 401) environmental problems are now regarded as far surpassing local level involvement and threaten the sustainability and stability of the earth's life-support systems. Participation is a key aspect in the advocacy of solutions, and the engagement of civil society and a greater commitment by politicians will help increase and implement the policy, regulatory and voluntary options advocated by the various social partners.

Participation is an important and essential aspect of collaborative resource management. Bouwen and Taillieu (2005: 138) seek to define participation by stating that it is viewed as a "managerial technique of joint superior-subordinate decision-making, focussing on effectiveness contingencies". They add that participation of the various tiers to work together and making decisions. Bouwen and Taillieu (2005: 143) further mention that social learning and knowledge on a project and societal level are essential to natural resource management and the collaboration this entails. As people are different, they are bound to agree on certain aspects and disagree on others, as no two persons share the same perspectives. One of the core problems in collaborative natural resource management is conflicting interests and objectives.

Bouwen and Taillieu (2005) mention that participation is not merely an instrument, but a complex system of structures and processes, that build and support the sharing of legitimate authority over participants and that pervades the way an organisation or institution views and relates to its members. Daniels and Walker (1996: 71) state that natural resource management policies and practices are in a phase of transition. Hall (1999: 274) concurs with the above authors in that he states that since the 1970s the South African government has sought to increase the rate of privatisation and commercialisation of functions such as collaboration. The reason for this is to decrease the rate of dependence on public enterprises, as well as to reduce dependence on public financial support grants. Government involvement is substantially affected by the nature of involvement from stakeholders with regards to multifaceted and contentious natural resource problems. The problem with collaboration and collaborative resource management is that they are often seen as the one and only solution, while this is often not the case (Conley and Moote 2003: 382). Manring (1998: 274) mentions that often key barriers come to light when taking collaborative resource management into account. Evaluation plays a large role in collaborative resource management. Conley and Moote (2003) mention various methods, means and reasons for this. Analysis and evaluation provide key information on how and why stakeholders need to be involved in environmental management and collaboration. They also mention why it is important for all sectors to work together, so that everyone on the different tiers is involved in all processes of their surroundings. These evaluation methods offered by Conley and Moote (2003) will be discussed under section five of this chapter.

According to McCool and Guthrie (2001: 309) the environment in which natural resource management occurs is becoming increasingly turbulent and controversial. In messy situations, and by that they refer to uncomfortable and complex problems within natural resource management, obtaining public participation and understanding of the effort required for success can often be problematic as implementation and modification need to be fundamentally learnt and understood. Stakeholders need not only to know, but also to understand their environment and be familiar with what they are doing in order to allow public participation a better chance of succeeding. With regards to environmental conflict, Timura (2001: 105-106) mentions three different environmental conflict models or "schools of thought". The three conflicting types include simple scarcity, conflicts caused by relative deprivation, and group identity conflicts. Simple scarcity conflicts are more likely to emerge between states and would thus be considered international. Relative deprivation conflicts are more likely to arise domestically. Across the

conflict types, there is a relative lack of flexibility of economic and political systems within the developing world.

Joseph *et al.* (2008: 594) indicate that one of the primary and fundamental challenges within resource and environmental planning is the effective implementation of plans. Benn *et al.* (2009: 1567) define government and governance broadly as the activities of government and also, more specifically, as referring to the processes of interactions between social actors, groups and both public and private institutions. Benn *et al.* (2009: 1570) state that the stakeholder theory conceptualises the managing of stakeholder relations and theorises their importance to an organisation; it is becoming increasingly applied to the public and private sectors alike. In terms of this theory a successful organisation is one which not only satisfies but preferably adds value for all stakeholders.

According to *Wageningen International* (2009) multi-stakeholder processes are: "firstly, processes that aim to involve stakeholders in improving situations that affect them. Secondly, multi-stakeholder processes are forms of social interaction that enable different individuals and groups, who are effected by an issue, to enter into dialogue, negotiation, learning, decision making and collective action. Finally, it is about getting government staff, policy makers, community representatives, scientists, business people and non-governmental representatives to think and work together". Multi-stakeholder processes are represented in Figure 1 below.

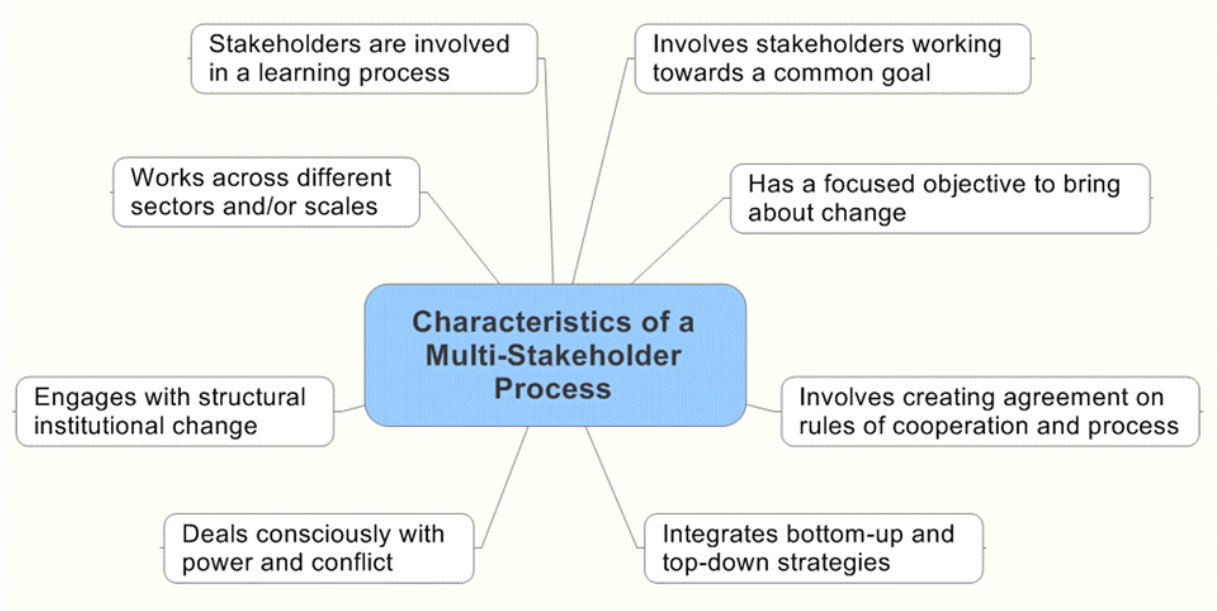


Figure 1: Characteristics of a Multi-Stakeholder Process (*Wageningen International* 2009)

Perrin and Saladin (2002: 1) analyse multi-stakeholder processes and list seven benefits with reference to sustainability assessment in the context of the WWF (World Wildlife Fund). These benefits include providing key information for the sustainability assessment process; they raise awareness of the links between trade, the environment and development; they build trust; they increases the buy-in, commitment and collective accountability with respect to the results of the

sustainability assessment and the trade policy-making process in general. They encourage ongoing partnerships between governments, NGOs, the private sector, and other key components of civil society such as in the academic world and local communities; they promote the development of institutional frameworks for increased public participation. Lastly, they increase the development and implementation of innovative policy solutions. Key stakeholders in multi-stakeholder processes include representatives from parliament and elected governments; from environmental and development NGOs; from the broader civil society, which includes consumers, local communities, labour organisations and others; and from private sector industry and associations (Perrin and Saladin 2002: 2)

With this background established, it is important to discuss the various stakeholders and their various contributions to collaborative environmental management. The first group which will be discussed is government stakeholders or otherwise known as public stakeholders.

2.3.1. Public Stakeholders

The DEA defines environmental governance as "the processes of decision-making involved in controlling and managing the environment and natural resources. Principles such as inclusivity, representativity, accountability, efficiency, and effectiveness, as well as social equity and justice, are the foundations of good governance" (DEA 2010). The definition of good environmental governance goes one step further to mention that government, or public stakeholders, should reflect to the best of their ability the structure, function, processes and variability that typify natural systems. It is essential to understand this as it affects the type of decisions made. If this is not understood, inappropriate decisions can be made, even with the best of intentions meant, and this can have disastrous environmental consequences (DEA 2010). Although governments are seen as the primary and most important stakeholders in collaborative resource management as they wield the power of policies, laws and strategies and influence how the environment is managed, exploited, and conserved, actors outside of the governmental realm are equally important as they help the government carry out its promises to the larger public community (DEA 2010).

Co-operative governance is a complex and complicated term which requires an understanding of other concepts such as co-operative environmental management and intergovernmental relations. Müller (2004: 402) indicates that co-ordination is a term which is becoming increasingly difficult to define as the nature of the issues is continually shifting. According to Naranjo-Gil (2009: 810) the new public management paradigm is a concept many organisations have shifted towards for the sake of a greater level of effectiveness and flexibility. The new public management paradigm serves as a common heading for different initiatives for organisations. Innovations are highly relevant and reflect the fact that environmental uncertainty has, for a while now, been blamed as a fundamental problem of organisations. This is because such uncertainty has created many difficulties with regards to decision-making in a public setting with public involvement. Public participation is an essential concept when looking at

collaboration and environmental management of natural co-management areas and resources (Walker *et al.* 2008: 70).

Public participation enables stakeholders to ascertain and incorporate what public needs. The public, in return, are able to offer new ideas and knowledge which might not have occurred to the stakeholders in charge of local environmental aspects and prospects. Environmental Impact Assessments frequently limit the extent of public participation as high-ranking officials have specific requirements to fulfil (Winter 2004: 18). Public sector capacity, according to Polidano (2000: 805), is a measurement of development and its feasibility. This can be seen as "the ability of the permanent administrative machinery of government to implement policies, deliver services, and provide policy advice to decision-makers". Polidano (2000: 806) further mentions that an index of public participation might help government in that it would turn outcomes into outputs thus delivering what was initially promised. It is essential to set boundaries when addressing public participation in order to measure capacity. It is often found in developing countries that governments resort to relying on private bodies that would then deliver services on behalf of the government and thus induce and include public participation as well as effective service delivers. An important distinction needs to be made between despotic and infrastructural power with regards to state capacity. "Despotic power is the ability of decision-makers to act in isolation from or even against the wishes of non-state actors. Infrastructural power is the ability of the state to penetrate society and see that its decisions are carried out" (Polidano 2000: 808).

Hauner's article (2008) makes it clear that comparing public sector involvement and public participation is important. Hauner (2008: 1745) explains that, within Russia, there are three concepts used in the country's sector which are implemented to measure public sector performance and efficiency: public sector performance, public sector efficiency, and data development analysis efficiency scores. Hauner (2008: 1474) further states "all these concepts measure performance by outcome indicators that are assumed to be targeted by policy and efficiency by relating performance to expenditure". In order to understand the public sector efficiency in three directions, it is necessary to better understand the differences in public sector efficiency in the variations between sub-national governments in the Russian public sector environment. Hauner (2008: 1761) explains this concept by describing the intergovernmental dealings provide incentives to improve efficiency on a sub-national level as well as including greater transparency via performance and monitoring.

One of the most important aspects of collaboration is the implementation and process of planning. A successful planning process requires those responsible for the plan and its implementation to be held accountable, and rewarded or penalised accordingly (Marx 1991: 25). Planning in collaboration is essential in that public sector involvement and public participation depend on a good foundation – which is the planning – to be able to be successful in implementation and action. Bureaucratic obstacles play a large role in the planning process, and by eliminating these obstacles well-organised and resourceful planning can take place.

Involving the public in collaborative natural resource management is proving difficult in terms of finding appropriate methods. Environmental planning and management play a large role in involving the public and these methods are changing rapidly. This is because agencies are attempting to follow and engage in management objectives "within an increasingly turbulent social and political environment" (Selin and Chavez 1994: 1). According to Bouwen and Taillieu (2005: 137) public involvement and public participation have been in some form or transition of public-solving and decision-making, and these factors in turn have become major themes in the governance process. Winter (2004: 12) mentions that public participation has received increasing attention over the last few years.

Public involvement in natural resource management is proving to be a difficult concept for agencies to adjust to, especially regarding the chaotic and tumultuous social and political environments (Selin and Chavez 1994: 31). Environmental managers are finding that they need new methods of dealing with collaborative resource management in the changing environments, not only do they need new methods, but also new skills to manage the collaboration Many agencies in the resource management field seldom allow citizens to take total control in decision-making, but rather the affected parties selected a spokes-person and collaborate with the natural resource agencies to make decisions. Selin and Chavez (1994: 35) define collaboration in a theoretical context. This definition describes "the pooling of appreciations and/or tangible resources, e.g. information, money, and labour, by two or more stakeholders to solve a set of problems which neither can solve individually". Collaboration is essentially done in groups from various tiers, otherwise collapse is inevitable. Managers need to ensure that decision-making methods used by the various stakeholders are centralised. This definition of collaboration can also serve to "integrate research related to transactive planning, open decision-making, partnerships, and co-management models".

Winter (2004: 17) mentions that there are four general reasons given for why the public needs to be involved in decision-making and environmental management. These are:

> "firstly, environmental management involves a complex set of interactions and inter-dependencies that exist between natural and socio-economic systems. This complexity requires a holistic and broad participatory approach to ensure that responsible decision-making is achieved. Secondly, long-term sustainable use of resources is dependent on managing human impacts that are acceptable to society. By implication, this suggests that resource management must involve the public. Thirdly, there is a widely held assumption that participation in environmental management both empowers and supports citizens to take responsible actions. Finally, a backlash against perceived economic, social and political domination by central governments worldwide has encouraged citizens to re-assert their right to participate in, and make decisions on local development processes as part of a broader push towards a participatory democracy".

The main purpose of environmental policies is to constantly keep this environment protected and sustainable, and the most effective way to do this is to raise public

awareness of communities and encourage local governments to work with the community and encourage involvement within environmental conservation. Holmes-Watts and Watts (2008: 441) made a list of the mismatches noted between the legal frameworks of management of natural resources their implementation on the ground.

- First, grassroots conservation officials lack an understanding of participatory process.
- Second, street-level conservation bureaucrats misconceive active community participation to mean mere attendance of conservation meetings by local communities.
- Third, conservation officials misconstrue jobs to be the ultimate goal of participatory conservation processes.
- Fourth, conservation officials do not treat rural communities with the same level of respect that they give to business people.
- Fifth, conservation officials in South Africa inappropriately do not consider the sharing of benefits and management responsibilities as key components of participatory conservation.
- Sixth, local communities are generally unaware of the administrative and bureaucratic procedures that they have to follow to derive material benefits from protected natural resources.
- Seventh, the political drive for blanket implementation of participatory management where there are no willing communities is counterproductive.
- Eighth, lack of diversification of participatory management products limits the scope of the management system

Carley and Christie (2000: 143-154, as cited in Müller 2004: 3) mention that there are a number of important factors when it comes to the limits of governance with regards to environmental management and conservation. These limits of governance include factors such as poor vertical integration, over-reliance on institutional reform, failure to learn from experience, and failure to confront the management process, to mention a few. Müller (2008b: 6) states “what is becoming increasingly certain is that we are moving towards a hybrid state, in which most governments seek less command and control regulation, more decentralisation, reduction in the size of the public sector and increased use of market-based tools”. The priority issue in environmental governance is the effectiveness of environmental management government. This problem is indicated by the number of people employed by government to manage the environment. Environmental governance is an important part of any government worldwide, and it is crucial for all governments to have a formulated plan to conserve and protect the environment. It is necessary to put laws into place so that the community can find out where the government is lacking in resources such as staff, and communities can then find out what needs to be done and assist with necessary resources. This leads to the next section, which includes government’s input in environmental conservation, which focuses on national and provincial levels of government, but mainly focuses on the local level of government.

Müller (2004: 1) presents the idea of ‘limits to governance’, which describes the complexities and constraints on an organisational level facing traditional governance. The major problems within governments tend to always occur at the boundaries, for example: between states, levels of government, between

departments of state, agencies and divisions within departments (Müller 2004: 3). Thus, from this perspective it can be stated that integration is a serious problem in government. It is important to discuss characteristics of the limits to governance, as mentioned by Carley and Christie (2000, as cited in Müller 2004: 3-4).

The first of these factors is that environmental problems are complex, and this complexity tends to prevent direct and straightforward 'cause-and-effect analysis' of the problems. It also prevents any government agency acting alone to implement simple solutions. The reason for this is that agencies acting alone are highly unlikely to resolve such a problem, and the same applies to the government acting alone. The second factor in the limits to governance includes the failure of the traditional command and control bureaucracies. These bureaucracies are ill-suited to deal effectively with rapid, unplanned change. This type of change is becoming more typical of environmental problems, thus causing a rapidly evolving process of knowledge of the problem as well as the problem itself. Any solution formulated needs to involve the public, private and voluntary sector initiatives which overlap. The third factor in the limits to governance is the case of the inadequate definition of environmental problems being based on a single discipline and its perceptions and solutions.

The fourth factor includes the 'administrative trap'. This factor describes the common mismatch between the nature of environmental problems and the sectoral problem-solving structures in government (Müller 2004: 4). This mismatch compartmentalises ecological problems, leading to recognising and treating the symptoms of the problem instead of the problem itself. This 'administrative trap' causes any steps taken to remain insufficient and ineffective to the task, resulting in a failure of horizontal integration. The fifth factor regarding the limits to governance includes poor vertical integration. This factor is the result of the everyday failure to understanding the problems themselves. Information flows between the policy levels of government and the end resource users – these may generate substantial and cumulative environmental impacts. The sixth factor of the limits to governance includes over-reliance on institutional reform. Carley and Christie (2000, as cited in Müller 2004: 4) state that "although institutional reform is often part of a high-quality management approach, there is a common tendency to assume that if the 'right' institutional arrangement can be brought into being, that adequate environmental management will result".

The penultimate factor to the limits to governance includes failure to learn from experience. There is often little motivation to learn from past experience within traditional bureaucracies. There is even less motivation to admit, analyse and learn from their past mistakes. The final factor regarding the limits to governance includes failure to confront the management process

The notion of government as the only decision-making authority has been replaced by multi-scale, polycentric governance in recent years (Pahl-Wasti *et al.* 2007: 2). This notion recognises that a large number of stakeholders in different institutional settings contribute to the overall management of a natural resource. The priority

issue in environmental governance is the effectiveness of environmental management in local government. This problem is indicated by the number of people employed to manage the environment by local government. By this is meant that not enough people within small areas are employed and included within the environmental management that the sector government supervises.

Martin (2005) mentions that the World Wildlife Fund (WWF) has taken on a serious role in the protection of the environment in the era of globalisation. While economic globalisation has been a positive factor for the business world, it has engendered important environmental and social problems as it erodes the protective power of national governments. According to Zoeteman *et al.* (2005), globalisation has led to important changes in the distribution of power and governance modes. Zoeteman *et al.* (2005) also mention that not all policy areas of government are equally vulnerable to loss of ambition and power. Special concern is needed for environmental issues lacking owners; these include global commons such as oceans, ice caps, climate, and the ozone layer. Jones (2005) discusses the relation between economic globalisation and national environmental policies, and mentions that the environmental effects of trade and investment activity can be deconstructed into scale effects, structural effects, and technology effects. Jones (2005) concludes that although not enough is known yet about the specific ways in which globalisation affects the environment, or the other way round, there is enough research suggesting that the effects of globalisation could be positive or neutral for the environment.

Government bodies are continuously challenged with policy objectives that are entirely legitimate, yet in conflict with one another (Von Moltke 2005: 4). One of the central tasks of public institutions of governance is to find and implement acceptable solutions to this problem as well as building consensus around them. Von Moltke (2005: 4) further mentions that a number of factors render this task relatively difficult, especially when it comes to integrating the goals of the environment and economy. The most problematic of these is the fact that the environment does not respond as readily as the economy does to policy measures. Environmental measures are often presented as non-negotiable and are mostly determined by scientific assessment. A highly undesirable situation for policy makers is seeking a balance and compromise. The most feasible and sought after situation has been to search for the areas where economic priorities and environmental imperatives are harmonious and compatible, and in practice it is often a larger sphere than most realise. This depends on whether economic policies are carefully crafted or not. However, it is often this harmonious relationship that makes the conflicts between environmental and economic concerns particularly unpleasant, as they operate in overlapping domains and have the potential to create serious problems for each other (Von Moltke 2005: 4).

Ramos *et al.* (2007: 410) discuss the notion that the development of environmental performance policy indicators for public services is an emerging issue. Public and private sector organisations differ in significant ways, particularly at organisational and functional levels. This is because each has its own specific policies, goals, objectives, targets, products and services. Ramos *et al.* (2007: 410) state that “within the public sector there are several types of public organisation such as:

central and local government departments, agencies, trading funds and public corporations. Public sector organisations pursue political and social goals rather than simple commercial objectives. In the private sector, there are sole traders, partnerships, co-operatives and public and public limited companies. There are also hybrid organisations such as jointly owned enterprises where the government retains a share of ownership". Policy indicators are one sure way of ensuring that sustainability issues are being consistently and transparently considered in public policy (Ramos *et al.* 2007: 411).

While examining the public sector within the context of collaborative resource management and the environment, it becomes increasingly apparent that there is a distinct relationship between the public and private sector. These are called public-private partnerships (PPPs). Within this context of collaborative resource management, it falls to PPPs to act as the mediator working between the two sectors. Lundberg *et al.* (2009: 1017) describe environmental performance measurements as an important component in strategies regarding the achievement of ecologically sustainable development. In the example in Lundberg *et al.* (2009), there is a distinct difference between public sector and private sector organisations and their fields of information, participation, hierarchical structures, goals and efficiency levels. Private sector organisations struggle to measure environmental performance; this is not for the lack of tools available or the progress in development of analytical frameworks, but rather the ineffective use of existing tools.

According to El-Gohary *et al.* (2006: 525), the concept of PPPs can be dated back to 1854 to the construction and operation of the Suez Canal. Since then, stakeholder involvement has become increasingly popular and has come a long way in terms of development and growth. Stakeholders can basically be defined as individuals or organisations which are either affected by or affect the development of the project at hand. It is thus essential for stakeholders to include and capture the input of the project developmental process. Various factors have been reported as the cause of failure in PPPs, and the main factor is public opposition. Stakeholder involvement, according to El-Gohary *et al.* (2006: 596), plays an important role in projects. An important concept to look at when discussing stakeholders is their involvement in infrastructure projects, in planning and design, as well as in participation. This is a key focal point for assessing the relationship between the public and private sector.

Within the range of PPPs there are three different types as well as different applications. The first type of PPP is one in which public and private sectors are represented by institutionalised cooperation. This is then applied in a socio-political context. The second type of PPP is one which can be seen as a policy instrument in an economic developmental set-up (Seemela 2008: 484). This is applied in the state and local officials' positions within the economic developmental framework. The third type of PPP is one which assesses the alternative forms of urban political structure. This type of PPP is often applied in times when the traditional role of government experiences a shift from "rowing" to "steering" (Seemela 2008: 484). Within PPPs one cannot view the public sector and the private sector as one aspect; they need to be viewed separately before

being viewed together, as both have unique characteristics when it comes to service delivery and the specific aspects involved. The most successful partnerships are derived from drawing on the strengths of the public and private sectors and each contributing their best qualities to establish corresponding relationships.

2.3.2. Private Stakeholders

As governments are renowned for having the majority of control with regards to environmental management, an important question needs to be asked: why involve the private sector? The PEPA Team, or *Priority Environment Projects for Access Team* (2002), answers this question by discussing the fact that traditionally, the majority of environmental projects in various fields have been implemented mainly by public sector organisations. These public sector organisations include governmental departments, local authorities consisting of municipalities, and other public agencies. In environmental projects, although governed by public agencies, the private sector tends to play a role most of the time (*The PEPA Team* 2002).

This has changed in recent decades as private sector organisations have a wider variety of projects and possibilities (Fernando 2003: 54). One key factor in favour of private sectors is that they have the potential to provide project finance. By involving private sector companies in environmental projects, a wider range of resources becomes available to help aid to public sector. These resources include finance (investment capital), technologies (access to proprietary technologies), manpower (additional staff), experience (in facility management and operational) and expertise (in project preparation, design, management and implementation). These additional resources offer the public sector a number of potential advantages to secure project implementation and provide environmental services, in principle at least.

The private sector plays various roles in public sector environmental projects. Five different roles can be categorised in environmental infrastructure projects. These include project preparation; project funding; design and construction; operation and maintenance; and revenue and profit. From the above-mentioned information it should be clearly noted that although the private sector can be viewed as an important component to incorporate into public environmental projects, the private sector does not remove all the responsibility of the project from the public agency. The public agency cannot pass on the responsibility for promises made. An important point to make is that private sector involvement is not always the wisest solution for the public sector as they need to fulfil their own promises (*The PEPA Team* 2002).

Traditionally, private sector representatives were allocated the role of regulating the amount of pollution released into the environment. This came about because industrial organisations and other operations were emitting above the set emission limits. Over time private sector representatives have expanded and taken on more significant and important roles and they have grown more stringent (Greene 2006:

2). The Australian private sector offers a noteworthy history of environmental stewardship when looking at international accounts.

Within the Australian private sector environmental performance has changed considerably and significantly over the past few years. Greene (2006: 1) states "today, environmental activities are usually viewed within the context of sustainability, triple bottom-line performance or corporate social responsibility... it is therefore difficult to single out roles for the private sector in environmental stewardship without inextricably linking them to their roles in sustainability". Greene (2006) mentions that the private sector plays a vital role in almost all areas of sustainability. The environmental challenges facing Australia forces one to conclude that the country has a long way to go in facing the environmental challenges and the challenges in achieving sustainability. Expectations have been placed on the private sector as they are required, along with academic institutions and publically funded research organisations, to carry out a series of studies which would lead to sustainability through modernisation. Modernisation in this context is important as it aids in the development of new methods to ward off possible future environmental problems with the help of new and developing technologies, as well as keeping the existing and old problems at bay (Greene 2006: 10). As part of the private sector, NGOs play a key role in aiding public enterprises.

According to Lane and Morrison (2006: 233), an NGO is a non-state or non-profit organisation which is mainly comprised of volunteers whose main objective is to concern themselves with distinct policy objectives from the state. Lane and Morrison (2006: 233) described NGOs as including particular political agendas and objectives, as well as charities and interest groups which focus on these particular agendas and objectives. NGOs are seen to play one of three distinct roles in civil society: firstly, providing services to citizens, therefore supplementing government; secondly, partnering, and thus complementing, government in the provision of public goods; and lastly, challenging government by demanding accountability and changes in public policy for the good of the people. NGOs are private organisations and are commonly important actors in the participatory and deliberative processes of the formulation of environmental policies. Land and Morrison (2006) go one step further to mention, in conjunction with the above-mentioned points, that some NGOs are of such magnitude that they can be seen to fulfil demands placed on the public sector by civil society where the public sector fails to deliver.

A global environmental movement has taken place over the last two decades resulting in environmental organisations developing into mass membership organisations. One of the main reasons the movement is called the global environmental movement is the most environmental problems are experienced in all countries worldwide. Local action committees are often observed promoting environmental awareness and each doing their small part by recycling, for example. Six types of transnational environmental problems arise on a transnational level and are dealt with by transnational organisations. These six are: global environmental mass organisations; large national organisations which have developed international programmes; environmental think tanks; international

umbrella organisations; national-level NGO coalitions in third world countries; and broad international coalitions working on a specific environmental issue (Van der Heijden 2002: 193).

Breitmeier and Rittberger (2000: 156) discuss the activities of environmental advocacy and service organisations and mention that the analysis of these activities suggests that resources which are supplied and provided by transnational civil society actors for environmental problem-solving are beneficial to state actors. The effectiveness of state policies can be improved by service organisations. In order for environmental NGOs to achieve their goals, they have realised that their work needs to be of a high professional level. Because of this level of professionalism, competent state actors in national governments and international organisations have increasingly given credit to these NGOs as a result. The lack of financial resources, however, limits the abilities and competency levels of NGOs (Breitmeier and Rittberger 2000: 156).

NGOs have the ability to inform the public about environmentally sound products and to encourage consumers to purchase these products rather than others. This is a form of a bottom-up approach in that it can persuade and encourage private firms to supply the products promoted by the NGOs so that the market for the environmentally sound products will grow (Breitmeier and Rittberger 2000: 144). On the other hand, NGOs are often constricted in their application and hands-on service in certain area. This is because some areas in environmental management are given more attention than others. An example of an area in environmental management given extensive attention is climate change. Although this area is no less or more significant than others, areas such as soil conservation or desertification then tend to be neglected as a result (Breitmeier and Rittberger 2000: 150). This type of focused attention often constricts NGOs and their ability to participate and deal with environmental issues in the long run.

An important aspect to perceive on the topic of NGOs is that of political parties and NGOs in global environmental politics (Van der Heijen 2002: 187). The era of twentieth-century modernity saw the functioning of nation-states as the principal political bodies. Within them, the most prominent political actors were political parties. Van der Heijden (2002: 187) mentions that in Europe, the political parties that were established in this time originated from the social movements of the nineteenth century. Examples of this include the labour movement and the farmers' movement. The era of modernity saw these movements became largely institutionalised and national level political parties took over many of their original functions. Western countries viewed materialisation of new social movements, such as women's movement, peace movement, environmental movement, and so forth. Almost all these Western countries saw the surfacing of the new Green parties.

Van der Heijden (2002: 188) lists three factors which prevented post-modern political processes from following the course laid out by the Western societies. These three factors include, firstly, that new social movements were concerned with the content as well as the form of politics. Secondly, the new social movements were concerned with post-materialistic and universalistic values and

not materialist values. Lastly, globalisation and post-modernisation weakened the position of parties further in favour of the more globally-oriented new social movements. The following question needs to be addressed to further understand the involvement of NGOs and political parties: “to what extent are global environmental non-governmental organisations (ENGOs) able to perform the functions which until recently were held by political parties?” (Van der Heijen 2002: 188). The answer to this can be found when looking at global environmental politics. ENGOs seem to feature more frequently than political parties in this area but do not have the capacity to fulfil all the necessary roles and functions which are traditionally seen to belong to political parties (Van der Heijden 2002: 188).

One of the most important differences between political parties and ENGOs is the interplay between the transnational environmental organisations and local groups and their actions campaigns. This is dependent on the strength of the global environmental movement as transnational environmental organisations cannot and do not act alone (Van der Heijen 2002: 193). Political parties have been found to have lost man of their original functions with their development into cartel parties. Environmental problems have been found to require global or transnational solutions. The original functions performed by political parties are now often found to be fulfilled by global ENGOs, on a ratio of four out of six functions. According to Van der Heijen (2002: 199), environmental NGOs are now more prominent than political parties in that the ENGOs are more able to fulfil more functions than the political parties but yet have not taken over the role of the government as they cannot play the most essential party role.

Malhotra (2000: 661) discusses the possibility of a future without aid from NGOs and mentions that this type of future looks doubtful and unpromising for governments and the international civil service community in that they will be under great pressure to deliver what they promised without the help of outside factors such as the NGOs. All natural conservation areas require an assorted and diverse system of large protected areas with financial assistance and long-term commitment to manage their resources (Rocha and Jacobson 1998: 937). Government alone cannot often handle environmentally conserved areas, either because of their size, the inadequate resources to do so, or there are more dire problems for government to attend to. According to Kemp *et al.* (2005), NGOs can and should play an important role in raising the fundamental motivation of producers and consumers. This will in turn fulfil the needs left unattended by government sectors and take some of the pressure of delivery off NGOs.

2.3.3. Local Stakeholders

On an international level, considerable attention has been given to thinking globally in the past few decades. This has led to the notion of local activity to be somewhat neglected (Roseland 2000: 74). Communities in developed and developing countries differ enormously in that developed countries tend to consume more natural resources and more fossil fuels, while emitting more ozone-depleting compounds. Local governments are not the only agencies in charge of community planning and development. However, they are the only bodies to represent and to be accountable for community decision-making as they are

locally elected. This factor makes these local government agencies critical players in the community movements towards being sustainable. A question which needs to be asked is: what is a sustainable community? Roseland (2000: 99) answers this question by stating that the concept of a sustainable community does not just describe one area, but rather a sustainable community can be described as a continually adjusting body moving forward to be able to meet the social and economic requirements of its residents, while at the same time striving to preserve the environment. This preservation is necessary so that the environment will be able to continue supporting the community.

With regards to development and developing communities, Roseland (2000: 100) mentions that communities in developing regions, or in a developing phase, face different challenges to those in developed regions or developed phase. The primary problem developed communities face is that they tend to be unsustainable. The opposite can then be said about developing communities, which tend to be sustainable but then remain underdeveloped in order to be so.

'Sustainable community' is a term to which no one definition can fully capture. Communities need to be involved in their environmental developments and in defining sustainability from their local perspective (Roseland 2000: 104). The problem that arises here is how to encourage democracy within a framework of sustainability. Three elements stem from this framework, namely: minimising consumption of essential natural capital; multiplying social capital; and more efficient use of urban space. Roseland (2000: 105) states "in general, sustainable development strategies should favour bottom-up over top-down approaches; redistribution over 'trickle-down'; self-reliance over dependency; a local rather than regional, national, or international focus; and small-scale projects rather than grand-scale or mega-projects". Sustainable development within collaborative environmental management needs to be democratic and on a participatory developmental level for community participants.

Beyerlin (2002: 13) states that local action moves the world. By this is meant that local actors are key components of national sustainable development strategies. This is mainly because many local governments internationally have responded positively to Agenda 21. Many local governments worldwide have successfully managed to increase basic environmental conditions for the better and dampen down those which negatively affect the environment. Local governments have been found, more often than not, to have established formal partnerships with ethnic minorities, major groupings, community-based groups, international agencies, national governments and other governments in order to accelerate the process of sustainability (Beyerlin 2002: 14). Lane and Morrison (2006: 234) mention that civil society refers to the intermediary sector between the state and the market – by this is meant the social and political power of households, civil associations and social movements.

According to Spaargaren and Martens (2005) citizens in a community play a significant role in environmental conservation because all citizens are consumers,

and all decisions government takes inherently affect the people on the receiving end of the decisions. Myers (2002: 149) mentions that there is a new trend moving throughout Africa which includes governments and NGOs encouraging citizens to participate in cooperating with government. This trend includes a more participatory, community-based form of conservation (Opschoor 2005; Myers 2002: 158). Lyons *et al.* (2002: 191) mention that an academic analysis of community participation has progressively shifted focus and developed into an analysis of the fundamental purpose of adopting a participatory approach which focuses on the concept of an 'ends versus means' trade-off.

According to Li (2006: 132), Western scholars have generally thought that active local participation in decision making is a precondition for benefits to reach communities. In developing countries, however, this is not the case. Local participation modes are related to the different institutional arrangements and different stages of environmental development. Communities need to have a say in what goes on around them and what becomes of their environmental. After all, they are the ones who know best what they need, with a little help from stakeholders; their needs could be made into a reality instead of just remaining a dream. The continuous loss of biodiversity, in tropical forests especially, has led to the creation of protected areas in many developing countries (Masozera *et al.* 2006: 206). Conventional management strategies such as "fences and fines approach" are often found to prohibit local access to protected areas and have escalated the conflicts between local communities and management authorities. Community-based management explicitly recognises the basic needs of local people in and around protected areas and is thought to help alleviate the conflicts related to biodiversity conservation. Community-based management is also considered as a way of engaging local people in resource management by incorporating their ideas, experiences, values and capabilities and sharing the benefits of management.

A good international example of citizen involvement and how it can work is found in a Canadian case study. In Canada, citizen involvement has been a focus of attention and innovative initiation, but also an area of continuing dissatisfaction. Provisions for public participation are written into environmental assessment legislation in all provincial and federal jurisdictions within Canada, yet it has been found that project proponents have been left mainly responsible for designing and carrying out public involvement schemes with no standards in place for doing so. Often citizen involvement only includes providing the public with a notification about proposed developments and providing an opportunity for citizens to submit written comments. It was found that community involvement in determining the purpose, scope and priorities of environmental assessment follow-up monitoring activities are likely to help produce results that are locally meaningful. By adopting a broad temporal, geographic and topical scope through ongoing monitoring and compliance assurance activities, benefits can increase. Strong partnerships among citizen groups, government agencies and project proponents are vital to the development of follow-up strategies that engage the public meaningfully and promote effective protection of valued natural and social features.

Within areas such as Canada, many project proponents and planners in the public and private sectors are required to forecast and minimise the adverse environmental effects of their undertakings. According to Hunsberger *et al*. (2005: 609), environmental assessments have traditionally been weak in the areas of planning and conducting effective monitoring, encouraging public participation, integrating social and ecological considerations encouraging environmental rehabilitation and enhancement, and examining cumulative effects of multiple projects. It has often been found that ensuring effective citizen involvement and follow-up monitoring have been among the enduring areas of difficulty for environmental assessment design and practice.

Internationally, increasing active citizen involvement and participation in environmental decision-making activities is proving to be rewarding as public involvement produces heightened public awareness, and the capacity and capability to engage in issues of local concern; involvement makes decision more powerful as citizens have the knowledge and background information on the problems; it also produces relevant and inexpensive amounts of information shares. Most of the time, individuals in any community have the opportunity to influence what goes on around them. Local stakeholders have the power and capacity to help communities improve their environment. The main problem arises when local actors attempt to encourage community individuals to participate. This is a problem, as it requires the community individuals to change their structural attitudes and values set in place – changes which do not come easily or lightly to human beings.

2.4. Environmental Governance Systems

Müller (2007a: 26) developed a framework for environmental governance systems including their criteria and descriptions. The criteria are useful in that they assist with the description, analysis and comparison when looking at environmental governance systems. There are fifteen characteristics to the framework. In order to explain and discuss environmental governance systems, it is necessary to examine the framework set out below.

Table 1: Framework for the Assessment of Environmental Governance Structures:

Criteria	Description
Scope	The problem domain, as identified by specifying the set of concerns which are addressed though the co-ordination arrangements, no matter whether they are environmental policies or management activities.
Position	The structure of co-ordination (1), as governed by specifying which stakeholders and role-players are involved in the co-ordination activities and what their roles are in the setting (e.g. agency, user group, co-co-ordinator, etc.).
Boundary	The structure of co-ordination (2), as governed

	by defining how specific individuals and stakeholders enter or leave those positions (e.g. whether by means of appointment, nomination or election.
Authority	The process of co-ordination (1), as governed by defining the co-ordination activities (i.e. information exchange or conflict resolution) in which position holders can or cannot participate, as well as the constraints on autonomy and/or individual action and the basis of power (e.g. law, plan, administrative policy or informal agreement).
Information and knowledge management	The process of co-ordination (2), as governed by specifying the kinds, forms, timing and processes of information exchange among the different position holders (e.g. shared database, monthly meetings or electronic networks).
Decision	The process of co-ordination (3), as governed by specifying the position holders' procedure for making collective decisions and resolving conflicts (e.g. by means of general consensus or voting procedures).
Pluriformity	The extent to which the networks are integrated, in so far that they will influence their likelihood of producing effective co-ordination (such as their level of integration determining whether they can be treated as a single organisation, or need to be treated as semi-autonomous organisations).
Interdependence	The extent of interdependence between the different entities making up the network, in so far as it influences styles of interaction and relationships (e.g. loosely coupled or closely interconnected), which, in turn, influences their likelihood of producing effective co-ordination.
Formality	The level of formality, in so far that it influences their likelihood of producing effective co-ordination.
Instruments	The nature of instruments used (i.e. planning, formal regulations or contracts), as it influences their likelihood of producing effective co-ordination.
Leadership	The presence of clear government commitment and leadership at the highest level effectively communicated to the various sectors of government machinery and across levels of government.
Institutional readiness	The degree to which jurisdictions are aware of and primed for engaging each other in collaborative governance of the different entities in terms of: The level of citizen and community interest and involvement;

	The availability of existing institutions and organisations for regional governance; The degree of practical experience in formal and informal cross-sectional co-ordination and co-operation; The amount of knowledge and appreciation of the missions, goals and objectives of the other participants.
Redundancy	Where overlap is an outcome of co-operative arrangements with two or more organisations performing the same task.
Incoherence	Where the co-operative arrangements are characterised by policies with the same clients, who have different goals and requirements.
Lacunae	Marked by failure of the co-operative arrangements, due to the absence of any organisation performing a necessary task.

Source: Müller (2007a: 26)

According to Müller (2007a: 22) the basic concepts as points of departure need to be discussed in order for a clearer understanding of the framework. These basic concepts include integration, collaboration or co-operation, and co-ordination. Margerum and Born (2000: 6, as cited in Müller 2007a: 22) states that co-ordination is the central apex of an integrated approach. They substantiate their case by further mentioning that this is because no single agency, individual or organisational unit can be held responsible for complex environmental problems, except on rare occasions. Also, a collaborative effort is required for problem solving by various bodies. Integration, collaboration or co-operation and co-ordination will be discussed respectively.

Integration is a concept which Margerum and Born (2000: 5-6, as cited in Müller 2007a: 22) define as both a concept and an approach in terms of which participants can define and attain specific environmental goals. Management and decision making become more incorporated through interaction as total integration is the ideal objective. Key issues, greater co-ordination of decision making, mutual support for planning objectives, and improved prospects for implementation help stakeholders in all fields and ranges to understand the interactions involved between them in the process of active contributions and co-ordination (Müller 2007a: 22).

With regards to collaboration, otherwise referred to as co-operation, governance systems cannot possibly address all issues pertaining to environmental management and the management of natural resources in this field. Müller (2007a: 22) mentions that governments can, however, help to obtain and secure the suitable technical assistance, resources, moral support and civic leadership. This

is so that governments are then able to address the issues significantly threatening sustaining the quality of life. Co-ordination is much harder to practise in the field than it is to define in theory. It requires a shift in human nature, specifically on the outlook, objectives and operational methods used as each individual differs. This required change poses a greater threat to the quality of life as co-operation is much more difficult than it seems. The only possible way collaboration could be plausible is through democratic collaboration between the greater civil society stakeholders and government agencies. The key piece to the puzzle that is collaboration and co-ordination is that of different entities working together as one in order to achieve singular or individual goals as well as collective goals (Müller 2007a: 23).

According to Margerum and Born (2000: 6, as cited in Müller 2007a: 25), "co-ordination is the process by which two or more organisations arrange, match or harmonise policies and programmes in order to achieve shared goals and objectives". The OECD (Organisation for Economic Co-operation and Development) published a policy brief in 2002 highlighting five criteria to determine the effectiveness of implementing sustainable development goals (Müller 2007a: 25). These five criteria are: "firstly, the development of common understanding of the concept of sustainable development; secondly, the presence of a sense of clear commitment and leadership; thirdly, the existence of specific institutional mechanisms aimed at steering integration; fourthly, effective stakeholder involvement in decision making; and finally, the efficient management knowledge" (OECD 2002: 5-7, as cited in Müller 2007a: 25).

The framework consists of fifteen concepts: scope, position, boundary, authority, information and knowledge management, decision, pluriformity, interdependence, formality, instruments, leadership, institutional readiness, redundancy, incoherence, and lacunae. This framework will be applied to the three different areas and the case studies chosen. The above paragraphs on integration, collaboration/co-operation and co-ordination explain the theoretical significance of the specific chosen aspects of the framework. These issues will be discussed in more detail and applied within a South African context in Chapter 3 and Chapter 4.

2.5. Evaluating Approaches for Collaborative Conservation

There are three questions to ask regarding evaluation approaches: why evaluate, who evaluates and what is being evaluated? The reason for evaluating is that participants in collaborative efforts want evaluations in order to help meet and improve on their personal goals. The motivations behind the evaluations differ. Conley and Moote (2003: 374) mention that evaluation will help understand the possible potential efforts and limits of collaborative natural resource management. The second question of who evaluates can be answered by stating that collaborative efforts towards conservation are constantly being evaluated by scientists, NGOs and governments alike. The third question, what is evaluated, Conley and Moote (2003: 374) answer by stating that what is evaluated depends on the scale on which the evaluation is taking place, for example, project level or state agency level.

Conley and Moote (2003: 373) discuss the evaluation approaches available for collaborative conservation. Evaluation is an important criterion in collaborative environmental governance. The motivations behind evaluation differ according to the scope of the participants. These participants include facilitators, advocates, academics, critics, funders and interest groups. They help improve the efforts of collaboration and thus help meet their personal goals. Collaborative efforts are frequently evaluated in an informal as well as formal way. Many participants in the evaluation process feel the need for a neutral third party to carry out the evaluation, thus attempting to achieve a more reliable and unbiased outcome of results.

Typical evaluation criteria, as set forth by Conley and Moote (2003: 376) include process criteria, environmental outcome criteria and socio-economic outcome criteria. These three criteria include a number of factors. Process criteria includes a broadly shared vision; clear, feasible goals; decisions regarded as just; participation by local government; and a clear, written plan. Environmental outcome criteria include: improved habitat; land protected from development; soil and water resources conserved; and biological diversity preserved. Socio-economic outcome criteria include: relationships built or strengthened; increased trust; increased employment; and improved capacity for dispute resolution, to mention a few. These criteria are illustrated in table 2 below.

Table 2: Typical Evaluation Criteria

Process Criteria	Broadly shared vision Clear, feasible goals Diverse, inclusive participation Participation by local government Linkages to individuals and groups beyond primary participants Open, accessible and transparent process Clear, written plan Consensus-based decision making Decisions regarded as just Consistent with existing laws and policies
Environmental Outcome Criteria	Improved habitat Land protected from development

	Improved water quality Changed land management practices Biological diversity preserved Soil and water resources conserved
Socio-economic Outcome Criteria	Relationships built or strengthened Increased trust Participants gained knowledge and understanding Increased employment Improved capacity for dispute resolution Changes in existing institutions or creation of new institutions

Source: Conley and Moote (2003: 376)

2.6. Summary

This chapter examined the problem of collaborative resource management and collaborative environmental governance on an international level. The various role players or stakeholders were reviewed and their actions and roles performed in support and for collaborative environmental governance and collaborative resource management. It was found that all stakeholders are important when dealing with collaborative resource management as each sector involved has an important contribution to make regarding the environment. This section discussed an evaluated the various stakeholders and the roles they play in the fields informally, formally, individually and as a team. These stakeholders include the three tiers of government, NGOs civil society or the community and the environmental governance systems in place in order to regulate the management of collaborative resource areas. It was found that local government is a fairly important factor in collaborative resource management as it acts as the "go-between" between the higher levels of government and civil society. It also plays a role in contributing evaluation processes to ensure successful outcomes.

The following chapter will discuss the problem of collaborative environmental governance and collaborative resource management in a South African context; the policy and institutional framework for environmental governance in South Africa will also be assessed and examined to ascertain how the governmental policies set in place in South Africa play a role in collaborative resource management. Also, policies set in place to conserve environmental areas and the management will be reviewed in order to consider how their environmental

governance systems work within South Africa. It is important to look at the problem of evaluation approaches on a South African level. Chapter Three is essential to understand how developed and developing countries differ, as well as how international countries differ in their evaluation techniques. The purpose here is to find a way to improve the system currently in place, to see if co-ordination can be developed into a constructive piece of the puzzle.

CHAPTER 3: POLICY AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL GOVERNANCE IN SOUTH AFRICA

3.1. Introduction

In South Africa, as in other countries, fragmentation and lack of co-ordination pose a significant problem for the various stakeholders involved. This problem prevents the success of integrating environmental governance (Müller 2008a: 86). Natural resource management and the complexities lead to a fragmented institutional landscape for the various stakeholders to work within (Müller 2007b: 45). These stakeholders include the public sector, which consists of the government; private sector institutions; NGOs, which are categorised as civil society sector; privately-funded organisations; and local stakeholders, which consist of communities and local agencies of government. Because of the emergence of the problem of managing collaborative governance and co-ordination, the idea of co-managing natural resources is the most promising institutional solution for sorting out and making a decision about resource conflicts in many countries. Also, the idea of building partnerships in conservation and management between government authorities and local actors entails a significant amount of problem solving. The primary aim of this chapter is to discuss the existing policy and institutional framework in South Africa with regards to environmental governance and the collaboration in this sphere. The secondary aim is to discuss the private and local levels of stakeholder involvement within South Africa, as well as their contribution to collaborative environmental governance and collaborative resource management. In order to achieve these two aims, the problem of collaborative governance and natural resource management first needs to be reviewed.

3.2. The South African Context

South Africa is a developing country most prominent for its rise to democracy in 1994. However, the environmental management system for South Africa, which originated in the beginning of the 1990s, is said to be a product of an evolutionary process (Müller 2009: 69). South Africa is a country with diverse and colourful history. In 1652, shortly after the arrival of the Dutch settlers in Southern Africa the environmental system we are familiar with today started to come into being. This was initially by the Dutch settlers who issued restrictions and limitations on the hunting of wildlife and cutting of trees. Thus the first official environmental management systems were put into place.

Müller (2009: 69) further mentions that South Africa's course of environmental management and the development thereof has followed that of other more developed countries and their methods. The focus has since changed to accommodate a more holistic approach. Thus focus changed from a holistic focus of habitat and ecosystem conservation to incorporate and to concentrate on sustainable development.

According to Müller (2009: 69), it was only in the 1960s when the need for a more holistic approach was noticed and a greater need for environmental management arose. The South African government recognised the need for a national environmental strategy and so put into motion the necessary procedures to draw one up. Stoll-Kleemann *et al.* (2006: 2) mention that in the early 1970s UNESCO had launched the Man and the Biosphere (MAB) programme along with its World Network of Biosphere Reserves. In the 1980s a statutory body, the Council for the Environment, was specifically developed to advise the Minister of Environmental Affairs, as well as on a small scale to offer advice to stakeholders on all tiers, including on policy matters. Also in the 1980s and early 1990s a structure of parliament – the President's Council – under the previous dispensation produced a number of achievements. These include priorities for conservation and development, a number of reports on nature conservation in South Africa, and priorities for a national environment management system

In 1992, the United Nations Rio Earth Summit developed the idea of a combined approach to government decentralisation and a devolution of responsibility, which was perceived as the most hopeful and capable institutional prospect for future years. This point of departure was substantiated with the argument that central guidance may sometimes be necessitated by transformation requirements. This framework or idea is generally widely accepted (Müller 2007b: 45). Wynberg (2002: 233) states "substantial post-Rio changes to the conservation and management of biodiversity in South Africa have come about predominantly through democratisation, but also by the international paradigm shifts about ways in which our natural heritage can and should be conserved and used".

Since the change to a constitutional democratic dispensation in South Africa in 1994, public problems, specifically focused on the environment, have been viewed as being linked together with and in the form of various fundamental changes to the form and function of the state. The current rethinking about various changes in the democratic government has spread on a worldwide basis. The basis for managing the environment after 1994 was set of governance structures and relationships, together with laws, policies, guidelines and procedures (Müller 2009: 69). In South Africa, as in many other countries worldwide, new policies, laws, guidelines and procedures have been issued and have led to incremental additions to institutions and regulations. Müller (2008a: 87) discusses the reality that South Africa has followed international trends and is in the process of developing environmental governance systems. In the late 1990s, South Africa saw the emergence of innovative new networked regional and community-based natural resource governance system.

The term 'government' can be defined as "the act or process of governing, especially the control and administration of public policy in a political unit" (*The Free Dictionary* 2012). The term 'governance' has been more commonly used to replace the term 'government' and has characterised the restructuring of the public sector and the transformation of the institutional landscape. The term 'governance' can be defined as the political direction and control exercised over the actions of the members, citizens, or inhabitants of communities, societies, and states; direction of the affairs of a state, community" or as "the exercise of

authority or control; or a method or system of government or management" (*Online Dictionary* 2010). The term 'governance', according to the Institute on Governance (2002, as cited in Stoll-Kleemann *et al.* 2006: 4), is defined as the interactions among institutions, processes, and traditions that determine how power is exercised, how decisions are taken on issues of public and often private concern, and how citizens or other stakeholders have their say. Fundamentally, governance is about power, relationships and accountability: who has influence, who decides, and how decision makers are held accountable. Governance may be used in different contexts – global, national and local, as well as social and institutional. Governance occurs whenever people organise themselves – formally and informally – to develop rules and relationships with each other in pursuing their objectives and goals (Stoll-Kleemann *et al.* 2006: 4).

The DEA (2006) defines environmental governance as "the processes of decision-making involved in controlling and managing the environment and natural resources. Principles such as inclusivity, representatively, accountability, efficiency, and effectiveness, as well as social equity and justice, are the foundations of good governance". The DEA goes further and states that if the concept of environmental governance is not fully understood, inappropriate decisions are more likely to be made and will probably have disastrous environmental consequences at the end of the day.

The main emphasis is placed on the central reality of public problem solving for the near future. This includes the collaborative nature of governance, its reliance on a wide array of third parties in addition to government to address public problems and the pursuance of public purposes. According to Müller (2008a: 87), "South Africa has followed international trends, and consequently innovative new networked regional and community-based natural resource governance systems emerged in the late 1990s". The first collaborative conservation programme was linked in 1995, the *Working for Water* programme. The first biosphere reserve, Kogelberg biosphere reserve, was initiated long before it was formally established, and its formal establishment took place in 1998. Other initiatives, such as CAPE, were initiated since then.

Within the context of South Africa it is necessary to take into account the fact that South Africa historically discriminated against the non-white population until 1994. Thus, now, the government still has the problem of people to support and cater to, as well as ensure that they have an environmentally sound area to live in (Holmes-Watts and Watts 2008: 435).

However, more than other countries, South Africa suffers from deeply etched inequalities build into the old institutional and legal structures of environmental policy. This landscape of inequality leads to the current government still suffering fragmentation of the past regime's mistakes. Trying to correct and repair past and present problems presents a challenge, as many promises are made by government, yet it does not have the capacity or the necessary resources to carry out all of them. According to the International Development Research Centre

situated in Canada (1995, as cited in Müller 2009: 70-71), there are eight factors which point to the problems associated with environmental governance systems in South Africa. These are: a very high degree of fragmentation of policy; a potential conflict of interest between government departments; the ineffective enforcement of legislation; a general situation of inadequate accountability to the public; a scarcity of trained human resources in critical key areas; fragmentation of responsibility among government departments which coexists with over-centralisation of authority; the problem of a lack of public participation; and a weak 'champion' for the environment (Müller 2009: 70-71).

Wynberg (2002: 234) mentions that biodiversity conservation is deeply associated with South Africa's turbulent past of colonialism and apartheid, and, historically, the country has followed a protectionist approach regarding people as separate from nature and to be kept away from it. Conservation was also seen to be associated with protected areas that served the privileged elite, namely the white minority, which meant that physically restricted access to natural resources often involved the forced relocation of black communities. According to Homes-Watts and Watts (2008: 436) the previous natural resource management policies, laws and strategies of South Africa had sufficient conservation attributes. This statement is borne out by the fact that South Africa is on the global ecotourism map as a result its existing network of protected areas. The political environment of the apartheid era in South Africa was generally seen to compromise the soundness of the existing policies. Before 1994 South Africa was ruled by a minority government. According to Homes-Watts and Watts (2008: 436), this government saw no role for rural people, who were also dependent on their surrounding natural resources. The government implemented a method of social engineering which led to the forced removal of black people, the majority of the population, from their ancestral grounds for the purposes of conservation. This drove a wedge between authorities and local communities, creating tensions, and conservation policies were therefore viewed negatively by the black majority population.

Yet conservationists in the new democratic South Africa encounter many more conservation challenges than their counterparts in the old South Africa. For example, according to Holmes-Watts and Watts (2008: 436), the conservationists in the old South Africa identified area that had unique ecological attributes and used their state power of coercion to remove people from these proposed protected areas. Because the local communities and their welfare did not feature in the decision-making for managing natural resources, there was no need to develop the skills of the local communities regarding joint management of protected areas. According to Le Maitre *et al.* (2007: 368) apartheid also left South African society with deeply divided views on the environment. A fragmented, uncoordinated and polarised set of institutions had been created by the apartheid government. No fewer than seventeen governments departments had the primary responsibility for nature conservation before 1994. Many of these departments had divergent and sometimes conflicting laws. Wynberg (2002: 234) states that South Africa's excellent record of conserving biodiversity occurred more by default than by design, which was driven by the committed efforts of many individuals and NGOs. Attempts to construct a coherent approach to biodiversity conservation and to integrate biodiversity considerations into national decision-making were undoubtedly hindered by fragmentation.

Thus with the advent of democracy in 1994 when the African National Congress (ANC) came into power, it was noted that South Africa's political transition required all sectors of the economy to transform, including the institutions for conservation areas and national parks. The rise of participatory democracy in South Africa, with a strong emphasis on social justice, required the participatory processes in nature conservation to be institutionalised. The democratic government developed and wrote up framework laws to promote effective participation of the historically disadvantaged rural communities in the management and use of protected natural resources (Holmes-Watts and Watts 2008: 347). Prominent features in the framework and conservation-specific laws include equity, rights to natural resources, capacity-building, poverty reduction, and ownership of natural resource. However, it must be noted that institutionalisation of participator natural resource management does not only include the formation of legal frameworks, but also the development of norms for the stimulation of relevant and appropriate practices (Holmes-Watts and Watts 2008: 437).

The matter of the environment, according to Wynberg (2002: 233), suffers from being perceived as a white, middle-class issue which is focused on nature conservation and is not relevant for the development and social justice to meet the urgent needs of the country. Conservation in South Africa over the last two decades has moved directly into the socio-political arena concerned with human rights, access to natural resources, equity and environmental sustainability.

3.3. Environmental Governance and its Stakeholders

The environment is mainly the responsibility of the government, which consists of three spheres: national, provincial and local. According to the DEA (2001: 54), environmental governance is defined as "the processes of decision-making involved in controlling and managing the environment and natural resources. It also includes the manner in which decisions are made". The DEA (2001: 54) also states that "although governments, through their politics, laws and strategies, are important players in directing the way in which the environment is managed, exploited, and conserved, actors outside government are equally important". Lyons *et al.* (2002) have similar ideas on this matter and mention that in South Africa, the changes concerning the balance of power existing between the national government, local government and the local community have had an essential and profound impact on the extent and quality of the focus area of participation, mediated through the changing institutional structures of projects.

The DEA (2008) states that environmental governance is only effective if it leads to fair and sustainable management of ecosystems. They further state that "weak governance very often causes environmental degradation, as do conditions in which people have no means to secure their natural, financial, and personal resources, which can lead to scarcity". Environmental governance is an important part of any government duties worldwide, and it is crucial for all governments to have a clearly formulated plan to conserve and protect the environment. It is necessary to put laws into place so that communities are able to find out where the government is lacking in resources such as staff, and the communities can

then find out what needs to be done and aid the government in the various resources. This is then followed by the next section, which includes government's input in environmental conservation; it examines this with respect to national and provincial levels of government, but focuses mainly on the local level of governance.

The Green Paper on Conservation and Sustainable Use of South Africa's Biological Diversity (RSA 1996b) has a mission statement which states that "government will strive to conserve South Africa's biological diversity and to thereby maintain ecological processes and systems whilst providing lasting development benefits to the nation through the ecologically sustainable, economically efficient, and socially equitable use of biodiversity resources". The main objective of the Green Paper on Environmental Policy for South Africa (RSA 1996c) is that government needs to address many environmental issues, such as how to improve ways to address pollution and waste control, and focus on people and their participation within environmental decision-making. The purpose of the paper is to provide a basis for developing an environmental policy which will lead to sustainable development.

According to the White Paper on Environmental Management Policy for South Africa (RSA 1998c), the following points outline the concept and importance of good environmental governance.

- Firstly, governance should be responsible and accountable;
- Secondly, regulations should be enforced;
- Thirdly, integrating mechanisms and structures that facilitate participation should be established;
- Fourthly, there needs to be inter-ministerial and interdepartmental coordination;
- Fifthly, the institutional responsibilities for regulating environmental impacts and promoting resource exploitation should be separate;
- Sixthly, people should have access to information;
- Lastly, there needs to be institutional and community capacity building.

Governmental policies can only be rendered effective if the government provides enough people to carry out the policies. These people who implement the policies need to be sufficiently skilled and experienced. The country has the second highest number of plant extinctions is the world. Cape Town contains remnants of the threatened renosterveld vegetation, of which only three per cent remains, making it one of the most endangered vegetation types in South Africa, if not in the world (City of Cape Town 2001a). The main priority issues for biodiversity include loss of habitat and the biodiversity of land-based ecosystems; loss of species; loss of soils and agricultural potential because of urban expansion; and the mining of minerals, sand and clay (City of Cape Town 2001b).

According to Winsemius *et al.* (2005), there are three schools of thought with regards to effective environmental strategies. These include conservationists, communitarians and liberals. Conservationists traditionally focus on the reinstatement of inherent and institutional trust. This places its emphasis on family

units and creating natural trust. Winsemius *et al.* (2005) state that "government bodies such as the police and social institutions like education play a major role in actualising desirable social change, thus providing institutional trust". Communitarians, on the other hand, underline that reinforcing community trust is the way to go. This school mainly focuses on preventing people from withdrawing from their society. Liberals believe that value changes in society have led citizens to change their position with regards to politics and government.

Building partnerships between governmental and private stakeholders in proving to be more difficult in practice than in theory. Due to the fragmentation of institutions within South Africa and the lack of co-ordination, stakeholders are finding it increasingly difficult to carry out their tasks and achieve their goals. According to Pahl-Wosti *et al.* (2007: 3) factors within South Africa such as the rapid dynamics of socio-economic development, climate change and globalisation are escalating the degree of uncertainty that managers are facing from a regional scale within South Africa to a global scale. A more flexible and adaptable management approach is required that has the ability to speed up the learning cycle to allow for more rapid assessment and implementation to take place. Adaptive co-management merges the dynamic learning processes characteristic of adaptive management with the linkage characteristic of cooperative management.

According to Stoll-Kleemann *et al.* (2006: 4) governments and their administrators exert an important influence on public matters. However, in the area of conservation and the environment, there are many powerful actors playing a role. These include NGOs, indigenous peoples' organisations, trans-national corporations, bodies of international and national law, scientific and local expert groups, and professional associations. Malan (2009: 1138) indicates that public participation is incorporated within the South African legal framework and co-operative governance is being progressively utilised in the context of environmental management. Malan (2009: 1139) explains constitutionalism as an approach or an experience that has developed mainly in democratic states. In the case of South Africa, relations between the government and society are synchronised and standardised by means of the Constitution (RSA 1996a). The following section discussed the polities for environmental governance within South Africa.

Cooperation among different sectors is essential as it addresses the challenge of dealing with natural resources in a contemporary way (Müller 2008a: 87). Natural resource management is an important aspect of environmental management and collaborative resource management. This is because natural resources are being depleted with the increasing population demands on a daily basis. The different sectors, for example local actors and governmental authorities, need to resolve conflicts around the topic of natural resource management and need to build partnerships for the improvement of the environment in order to sustain the growing population demands.

One major benefit from establishing and conserving an environmentally susceptible area is that the government can receive compensation for doing so. According to Berry and Rondinelli (1998: 40) proactive environmental management from government help spur on multi-national corporations to become proactive in environmental management, as well as encouraging companies to implement sound management practices within various aspects of organisations such as monitoring, auditing and environmental accounting. This implies that environmental costs have been misunderstood to a certain degree in the past, and that it is now understood that environmental costs directly affect the bottom line of any organisation. Yet organisations have been found to discover plausible reasons to explain the full costs of environmental performance (Berry and Rondinelli 1998: 45). The government compensates these types of organisations with tax reductions and benefits from SARS (South African Revenue Service), with further encourages organisations and businesses to implement environmental policies and strategies to become “green”.

3.4. Policies for Environmental Conservation

In most constitutional frameworks, according to Müller (2009: 77), provision is made for different spheres or tiers of government. These spheres may include a central/national, regional or local level, or in some cases, only for a national and a local level excluding the regional level. The constitutional arrangements of the particular country influence the levels of authority and autonomy granted to the tiers or levels of government. Institutional diversity may be necessary and functional with regard to different institutional types and arrangements. This is particularly applicable to the diverse natural of environmental services performed. Müller (2009: 79) further mentions that it is necessary to establish a central government institution with high political status and sufficient government authority. This is in order to deliver the required environmental regulation and protection functions with the aid of public money.

Polities are important documents which are mostly formulated by and on the national and provincial levels of government, and carried out at local levels of government. Policies for environmental governance are essential to all countries as they also relate to other spheres such as health, education, employment and natural resource use. Having a healthy environment has many positive impacts on the rest of a community, and it is government’s responsibility to ensure that this condition is preserved. Environmental policies are mainly formulated by the DEA, with help from the local surrounding communities, as it is their main priority to ensure environmental conservation. According to Müller (2008a: 86), it is essential for all three spheres of government to work together effectively in order to achieve desirable results. The intricacy and significance of modern challenges for natural resource management require tiers of government to have a common focus and goal. Müller (2008a: 87) states that “South Africa has followed international trends, and consequently innovative new networked regional and community-based natural resource government systems emerged in the late 1990s”. Policy formulation and implementation involves a large number of actors from different sectors. This is important as policies need to be formulated and implemented with a clear idea of what still needs to be done (Bryan and Crossman 2008: 1176). The DEA is primarily responsible for the policy agenda, yet community involvement is

common practice when formulating these documents as local communities know what the problems are in the environment better as they live in the area.

The failure to implement national policies on local level may result in community dissatisfaction and disequilibrium in management in local level departments, i.e. municipalities. Cooperative environmental governance implies the requirement for different spheres of government to work together; according to the DEA (2006: 75), local government is responsible for implementing environmental policies, plans, and programmes of national and provincial governments; ensuring alignment of Integrated Development Plans (IDPs) and provincial Environmental Implementation Plans (EIPs); and lastly, ensuring that IDPs comply with National Environmental Management Act (NEMA) principles.

According to the DEA (2006: 75), the City of Cape Town has achieved capacity-building to a fairly large extent of a local level. It can be argued that the local level is more important than national and provincial levels of government to a certain degree, as it is the local government level which has to implement all the policies and programmes that national and provincial governmental levels formulate. The City of Cape Town (2001b: 3) discusses local government responsibilities and mentions that the Constitution (RSA 1996a) commits all levels of government to sustainable development so as to ensure that the environment is protected for present and future generations. Local government's constitutional roles and responsibilities reinforce the commitment of local governing bodies to those principles. The City of Cape Town has initiated a Biodiversity Strategy in an effort to ensure that the unique biodiversity of the Cape is protected and enhanced for the benefit of current generations, as well as for future generations. The City of Cape Town, in partnership with the Table Mountain Fund, the National Botanical Institute and the Botanical Society of South Africa has initiated a project to demonstrate viable urban conservation initiatives (Burns and Kidd 2009: 222)

According to Pomeroy and Douvere (2008: 816), stakeholder involvement provides an opportunity to deepen mutual understanding about the issues at stake and stakeholders need to be involved and contribute to the setting of priorities, objectives and purpose in addressing these issues. Different types of stakeholder participation in South Africa range from communication to negotiation, where decision-making power is shared among the various stakeholders. Woodhouse (1997: 537) presents an interesting case study on Kenya demonstrating the level of governance and local environmental management in Africa. Woodhouse (1997) mentions that current policy prescriptions for environmental management in Africa emphasis the devolution of resource management to local non-government and community organisations. This challenges the long-standing orthodoxy of environmental conservation based on land privatisation, and instead favours local institution managing resources as common property. Implicit within much current policy is the assumption that devolution of natural resource management will be socially redistributive as well as environmentally benign. Evidence from Maasai group ranches in southern Kenya suggests that this assumption may be misplaced and that to address equality goals policy must take more explicit account of the social dynamics underlying local power relations, as well as of the way these are conditioned by the non-local political environment.

Environmental law is noted by Van der Linde (2009: 193) to be a distinct branch of law and an essential component or policies surrounding environmental conservation. The term 'environment' has been defined by South African Statutory Law. Section 1 of the NEMA (Act 107 of 1998a) provides that:

> "'environment' means the surroundings within which humans exist and that are made up of
>
> (i) The land, water and atmosphere of the earth;
> (ii) Micro-organisms, plant and animal life;
> (iii) Any part of combination of (i) and (ii) and the interrelationships among and between them; and
> (iv) The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being" (RSA 1998a)

At national level within South Africa, three legislative mechanisms exist to afford protection of the environment. Van der Linde (2009: 193) states that "the first mechanism is the constitutional entrenchment of environmental issues through either a rights-based or regulatory approach to the Constitution (RSA 1996a). The second legislative mechanism is to protect the environment through environmental framework legislation and the third mechanism is to adopt specific environmental legislation that can cover a range of environmental media". The environmental governance emerging after 1994 in South Africa still has a profound effect today as environmental policies are built up and based on these earlier policies. According to Wynberg (2002: 234) the democratic elections which took place in 1994 acted as the catalyst for a series of much needed changes to the legislative, policy and institutional frameworks for biodiversity management in South Africa.

Within South Africa, two advances in environmental protection came about with the adoption of the Constitution in 1996. The Constitution (RSA 1996a) is the supreme law in the land, covering all economic, social and political decisions and activities. This includes access to environmental resources (Holmes-Watts and Watts 2008: 438). The first advance was the inclusion of an environmental right through Section 24 of the Constitution (RSA 1996a). Section 24 of the Constitution (RSA 1996a) grants rights to environmental security for every person, including people's well-being and rights to participate and enjoy the benefits of a healthy and well-protected environment. The protection of the environment through reasonable legislation and other measures is also required in this section. Officially, the legal framework states:

> "Everyone has the right to:
>
> a) Have an environment that is not harmful to their health or well-being; and
> b) Have the environment protected, for the benefit of the present and future generations, through reasonable legislative and other measures that:
> 1) Prevent pollution and ecological degradation; and
> 2) Promote conservation; and
> 3) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (RSA 1996a).

The second advance is that it resulted in a more coordinated and integrated approach to environmental protection on a national level (Van der Linde 2009: 196). The Constitution (RSA 1996a) also highlights the various competencies within government in relation to the environment in addition to the inclusion of an environmental right. Chapter 3 of the Constitution (RSA 1996a) emphasises the notion of cooperative governance. Wynberg (2002: 12) states that Chapter 3 "reflects a fundamental departure from the past in that the three traditional spheres of government – national, provincial and local – are no longer regarded as hierarchical tiers within national government at the helm, but rather as three 'distinctive, interdependent and interrelated' spheres of government".

According to Wynberg (2002: 12), national government and the nine provinces are accorded concurrent legislative competence through the Constitution (1996a), in terms of most functions relevant to biodiversity conservation. Areas included here are the environment, nature conservation, agriculture, pollution control, soil conservation, regional planning and development, rural and urban development, and tourism. Wynberg (2002: 12) concurs with what Müller (2009: 81) discusses on certain areas as being of exclusive national competence such as national parks, marine resources and botanical gardens, which are demarcated by the Constitution (RSA 1996a). According to the DEA (2008), in 1995 the first democratic elections held in South Africa, the Consultative National Environmental Policy Process (CONNEPP) was launched, which resulted in the White Paper on National Environmental Management in 1997. In 1998 new legislation empowered the South African government to implement the policy, thus creating the models of participatory governance, cooperative governance and developmental governance in the NEMA (No.107 of 1998).

The NEMA (No.107 of 1998a) is seen as a derivative and its foundations are fundamentally based on Section 24 of the Bill of Rights, Chapter 2 of the Constitution (RSA 1996a). The reason for drawing up NEMA, according to Van der Linde (2009: 197), was primarily to give effect to the constitutional requirements and the responsibilities and entitlements presented by the Constitution (RSA 1996a). NEMA creates the much-needed basic legal framework for environmental protection within the country. Section 2 of NEMA draws attention to, and outlines the principles of environmental management. This section strongly provides the legal basis for community involvement in conservation. After the Constitution (RSA 1996a), NEMA can be seen as the most important law regarding environmental protection and management. It can thus be stated that the NEMA (Act 107) of 1998 is a constitutional directive which has been enhanced. NEMA contains a number of mechanisms used to promote and give effect to the standard of cooperative governance and sets a framework for integrating environmental management in all development activities in the country.

The NEMA (RSA 1998a) states its purpose as being "to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of the state; and to provide for matters connected therewith". Chapter 1 of NEMA, entitled National Environmental Management Principles, is central to

environmental management in South Africa. These principles are crucial for decision-making processes to be rendered effective. As the Act applies on a national level, it can be stated that these principles bind all organs of state and apply through the whole country. Environmental management needs to be integrated at all levels and needs to take into account the effects of all decisions made regarding the environment as all elements of the environment are linked and interrelated (NEMA, Act 107 of 1998a).

National environmental governance within South Africa is led by the DEA. According to Müller (2009: 81), the DEA is the lead agent of environmental management. However, other environmental functions are divided across a number of governmental departments. For example, the DWA covers environmental aspects such as water security, the Department of Agriculture covers the environmental aspects of conserving agricultural resources, and the Department of Minerals and Energy covers the environmental aspects of sustainable use and management of minerals and energy resources. Other constitutional institutions include the South African National Biodiversity Institute (SANBI), and the South African Heritage Resource Agency (SAHRA).

An important policy document to examine is the NEMBA (No.10 of 2004). This piece of legislation is one of the most substantial improvements in environmental governance. This is because it provides a comprehensive view on biodiversity, as well as providing the framework, norms and standards for conservation, sustainable use and equitable benefit-sharing of South Africa's biological resources (DEA 2008). By taking a comprehensive view of biodiversity, the NEMBA implements an ecosystem approach to planning and management. It also requires biodiversity to be mainstreamed into sectoral policy and planning. This act requires the management and planning of an ecosystems approach to include the responsibilities relating to the full diversity of South Africa's fauna and flora. South Africa's biodiversity is increasingly threatened by human activities, which in turn threaten the very resource base upon which we depend (DEA 2006: 108). The NBSAP initiated many documents such as: Sustainable use of Biodiversity (2004); Conservation – Social Aspects (2004); Sustainable Use (2004) and, About the NBSAP (2003).

The NBSAP (2004) entails a continuous process of development and implementation. The significance of the NBSAP proposed in 2004 is that, firstly, biodiversity considerations are integrated into all other strategies and plans – such as development programmes and poverty-eradication strategies. Secondly, the NBSAP will strive to provide a clear pathway for achieving objectives relating to biodiversity contained in the Johannesburg Plan of Implementation, one of the outcomes of the World Summit on Sustainable Development in 2002. For example, reducing the rate of biodiversity loss by 2010 is one of these objectives. In 2007, the NBSAP United Nations Secretary-General Kofi Annan stated that "failure to conserve and use biological biodiversity in a sustainable manner would result in degrading environments, new and more rampant illnesses, deepening poverty and a continued pattern of inequality and untenable growth". The ultimate significance of the NBSAP is that it will lay the groundwork for the National Biodiversity Framework (NBF) required by the National Environmental Management:

Biodiversity Act 2004 in Chapter 3. The development will take place by translating policy goals into an implementation plan. This plan will consist of firm targets, clear roles and responsibilities, realistic timeframes and measurable indicators.

The strategic objectives of the NBSAP (2004) are as follows:

- An enabling framework that integrates biodiversity into the socio-economy;
- Biodiversity contributes to socio-economic development and sustainable livelihoods;
- Biodiversity, including species, ecosystems and ecological processes, is effectively conserved across the landscape and seascape, with a focus on biodiversity priority areas;
- South Africa's international obligations are met where feasible and in the national interest;
- A cross-cutting objective, which relates to all the above objectives, is: Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector.

The strategic goals and objectives for the NBSAP in 2010 include:

- The Convention on Biological Diversity is fulfilling its leadership role in international biodiversity issues;
- Parties have improved financial, human, scientific, technical, and technological capacity to implement the Convention on Biological Diversity;
- National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention on Biological Diversity;
- There is a better understanding of the importance of biodiversity, and this leads to broader engagement across society in implementation.

The United Nations Convention on Biological Diversity emphasises equitable sharing of benefits. "it encourages the recognition, respect and preservation of knowledge, innovations and practices of indigenous and local communities" (Holmes-Watts and Watts 2008: 439). Another important piece of legislation is the National Environmental Management: Protected Areas Act (No.57 of 2003). This Act was amended in 2004 to make provision for national parks and marine protected areas, which consist of large areas of natural habitation for many species of plant and animal life. The primary aim of this Act is to increase local levels of management, participation, control and decision-making within and around protected areas. The Act seeks to establish a greater cooperation between communities, on the one hand, and between government agencies and the private sector, on the other.

With regard to biodiversity, Selman (2009: 143) mentions that the 'wider landscape' approach aims to sustain ecosystem services by reinforcing the intactness of environmental systems within South Africa. This often includes a strategic commitment to habitat reconnection through green and blue corridors

which may facilitate species diffusion and possess habitat value. Selman (2009) then further mentions that designated areas are increasingly being seen as 'greenprints' where sustainable development and environmental development practices can be explored and demonstrated through various policies. Policy drivers are often beneficial for designated areas and are the principal driving force whereby areas are designated in the first instance. Selman (2009: 145) states that "worldwide, there has been a rapid growth in nationally designated protected areas, with a ten-fold increase in the number of protected areas in the world over the past four decades. Over 18.8 million square kilometres are currently under protection".

The National Water Act (NWA) (No.36 of 1998b) aims to promote participatory management of South Africa's water resources. According to Farolfi (2004: 2), the NWA (1998b) promotes integrated and decentralised water resource management in a new institutional environmental. Farolfi (2004: 2) states that this body of water legislation is vastly and fundamentally different from previously implemented water legislation with specific regard to water rights. The NWA declares water a public resource. According to Holmes-Watts and Watts (2008: 439), it is worthwhile to note that forests play an important role in catchment management and the hydrological cycle. Incidentally, the Water Act promotes community participation in sustainable forest management. The DWA published a document in 1999 – The Water Management Areas of South Africa – mention that the corner-stone principles underlying NWA are equity, optimal use and sustainability. The NWA presents a two-tier approach – national level and catchment level – to the development of strategies to facilitate the management of water. Further water management-related topics will be discussed in Chapter Four.

With regards to international environmental law, the DEA (2008) states that:

> The current relatively loose, international system of environmental governance developed out of the 1972 United Nations Conference on the Human Environment in Stockholm, Sweden; the 1992 United Nations Conference on Environmental and Development in Rio de Janeiro, Brazil; and the 2002 World Summit on Sustainable Development in Johannesburg. It is characterised by three basic elements. Firstly, it is a collection of intergovernmental initiatives, such as the United Nations Environmental Programme (UNEP), the United Nations Development Programme (UNDP), and other specialised agencies and commissions responsible for coordinating environmental policy at the international level. Secondly, it has a framework of international environmental law that has developed over several decades; and finally, it has financing mechanism such as the Global Environmental Facility (GEF), and United Nations agencies and treaty secretariats that coordinate and carry out environmental efforts.

The purpose of these three components is mainly to set priorities and facilitate steps to protect the world's environment. South Africa has committed itself actively to international environmental governance. This was done through entertaining into multilateral environmental agreements.

According to Van der Linde (2009: 182), environmental 'soft' law is made up of a great body of both non-binding law, which can be found in the form of principles, guidelines, goals and codes of conduct. This is adopted at a global and regional level in order to assist governments in environmental management strategies and sustainable development. International 'soft' law instruments can also function as a foundation for negotiating international binding agreements. The need to translate the legal policy framework into implementation is the key strategic policy/legal issue (Steyn and Berrisford 2004: 8).

The last initiative, which is examined in this section, is the CAPE, which is an off-spin of the international system of environmental governance. The mission statement of CAPE states that "the CAPE partnership programme unites government and civil society in a strategy to conserve biodiversity and create benefits for the people of the CFR. The partnership is co-ordinated through SANBI and its fynbos biome programme". Younge and Fowkes (2002: 16) discuss the history of CAPE which links with the above information regarding international law. After 1994 the first steps taken to support the conservation and management of the CFR resulted in South Africa being granted US$12.3 million by the GEF. The bulk of this funding went into conserving the highly threatened Cape Peninsula, and a total of US$1 million directed towards developing a strategy and action plan to conserve the whole of the CFR. The reason for this is that the CFR is the world's smallest of six floral kingdoms with the most diverse and rich flora. Therefore, the CFR is considered a biodiversity hotspot as most of its flora grows nowhere else in the world. The CAPE (2000) was established to develop a long-term strategy to conserve the biodiversity, and it involves a wide range of different stakeholders and interest groups. The CAPE continued during 2001, and was a project mainly developed in partnership with the GEF in order to secure the future of the CFR.

At the request of government, the CAPE project was coordinated by the World Wildlife Fund for nature in South Africa (WWF-SA) and in partnership with government, communities and the private sector. The WWF-SA is a non-profit organisation, falling under the NGOs sector. It focuses primarily on involving various stakeholders mentioned to enhance the end results of decisions made and processes carried out. The main aim is to provide aid to the stakeholders who need help within the environmental governance sphere. The project addressed the conservation of biodiversity in three ecosystems of the CFR. These ecosystems are the terrestrial, marine and freshwater systems. In particular, the CAPE project aimed to:

- Identify conservation priorities in a rigorous, scientifically defensible manner based on assessments of biodiversity and threats;
- Develop a long-term strategy for biodiversity conservation in the CFR;
- Draft a five-year action plan and investment programme to address conservation priority;
- Identify potential sources of funding for these activities; and
- Involve key stakeholders meaningfully in the process (Younge and Fowkes 2003: 16).

CAPE is one of a number of ecoregional conservation (ERC) initiatives worldwide. The CAPE project was undertaken in three phases, namely stocktaking and

analysis, strategy development, and implementation planning. The major challenges facing CAPE with regards to project governance, project management and stakeholder participation were, firstly to “integrate the work of biological and social scientists in an effective strategy and action plan for conservation”; secondly, to “conduct a regional-scale public involvement process which included stakeholders meaningfully and created buy-in and commitment and implementation”; and thirdly, to “produce the strategy and action plan within a limited time” (Younge and Fowkes 2003: 17).

Over the past few years to present day the vision of CAPE is implemented b organisations which together form the CAPE Implementation Committee (CIC) (Müller 2009: 87). The CIC represents various stakeholders from national and provincial government, municipalities, the private sector, research and conservation NGOs, parastatals and community-based organisations. The programme is presented and carried out in stages to suit the development and implementation of the wider CAPE programme. By implementation the programme in this way, each project becomes a significant and fundamental component of a larger strategic approach. This approach was designed to avoid duplication of efforts, foster allies and, most important of all, designed to achieve an intense conservation outcome which would promote and assist nature and people alike (Müller 2009: 87).

According to CAPE (2009: 23) one of the most important outputs regarding the strategy development phase of CAPE was the agreement on a goal by all relevant stakeholders, namely that “the natural environment of the CFR and adjacent marine environment will be effective conserved, restored wherever appropriate and will deliver significant benefits to the people in a way that is embraced by local communities, endorsed by government and recognised internationally”.

3.5. Summary

This chapter examined the South African context of environmental governance as well as the policies protecting and associated with environmental conservation. The history of environmental conservation and the history of the relevant policies in South Africa were discussed as well. The emergence of environmental governance and conservation systems in South Africa over the past few decades is an exciting development as it follows international trends. Overall, the systems of environmental governance and conservation policies in South Africa elicit a positive attitude amongst the various stakeholders involved, despite possible problems mentioned above. The new environmental governance framework can and should be characterised as being decentralised participative and co-operative in nature. In environmental governance there are no easy solutions, which is why stakeholders need to collaborate and integrate ideas in a positive way.

In the next chapter entitled “Three Case Studies of Collaborative Environmental Governance in the Western Cape”, the three areas examined will be a water management area, a land management area and a biosphere reserve. The Cape

West Coast Biosphere Reserve has been selected as a case study to examine a biosphere reserve. The Breede water management area has been selected as a case study to examine a water management area, and the CFR with a specific focus on the Nuwejaars Wetland special management area has been selected as a case study to examine a land management area. An important part of examining these areas is to take into consideration basic concepts of biodiversity, land management and water management in order to understand the larger issues.

CHAPTER 4: CASE STUDIES OF COLLABORATIVE ENVIRONMENTAL GOVERNANCE IN THE WESTERN CAPE

4.1. Introduction

This chapter will describe three case studies, namely the Breede water management area, the Nuwejaars Wetlands system, and the Cape West Coast biosphere reserve. The various forms of cooperative management within these areas will be dealt with. Catchment Management Agencies, Special Management Areas and Water Management Areas will be examined, as well as the background to and history surrounding each type of area. The main objective of this chapter is to give an account of the level of governance systems which currently prevail in these three study areas according to the general theoretical literature and the case-specific literature.

4.2. Biodiversity in South Africa

South Africa is the third most biologically diverse country in the world supporting between 250 000 and 1 000 000 species many of which are found nowhere else (Wynberg 2002: 233). The DEA (2010) states that "South Africa occupies only two percent of the world's land surface, yet contains a disproportionately large share of global biodiversity, being home to nearly ten percent of the planet's plant species and seven percent of the reptile, bird and mammal species". Types of ecosystems and landscapes range from desert to subtropical forest and Mediterranean, the latter being found in the Western Cape. The great range of diversity in marine and coastal system, and the associated resources, sustain and underpin the livelihoods of millions of people in South Africa and contribute substantially to the country's economy (Wynberg 2002: 233).

According to Turpie (2003: 199) out of the seven major terrestrial biomes, the fynbos biome is the most prominent in terms of species richness and levels of being confined to a single geographical area as well as rarity. There are six biosphere reserves currently in South Africa. These include, in order of establishment, the Kogelberg Biosphere Reserve (1998), Cape West Coast Biosphere Reserve (2000, with an extension in 2003); the Waterberg (2001); the Kruger to Canyons Reserve (2001); Vhembe, and Cape Winelands (2007) (UNESCO 2009; Guziova 2007). Figure 2 represents the various protection areas in the National Spatial Biodiversity assessment. According to the DEA (2010) "this assessment measured what percentage of the conservation target of each ecosystem (measured as vegetation types) has been achieved". Cowling and Pressey (2003: 1) indicate that the long history behind the CFR involves biological exploration and extensively studied. The reason for the exceedingly high levels of rich biodiversity within such a small area remains something of a mystery, and many authors have speculated that it may be a result of factors such as soil nutrition content, the Mediterranean-type climate, and even the types of flora which are found here (Midgley *et al.* 2003: 88). But no one specific factor can be given sole credit for the high levels of biodiversity. On the other hand, Rouget *et al.* (2003a: 129) note that the CFR is not unlike other biodiversity areas in that the region's biodiversity is inadequately protected or conserved. Goldblatt and

Manning (2000), as cited in Rouget *et al.* (2003a: 130), mention that 9000 species of vascular plants occur in the area of 87 892 square kilometres, and 70% of these are endemic.

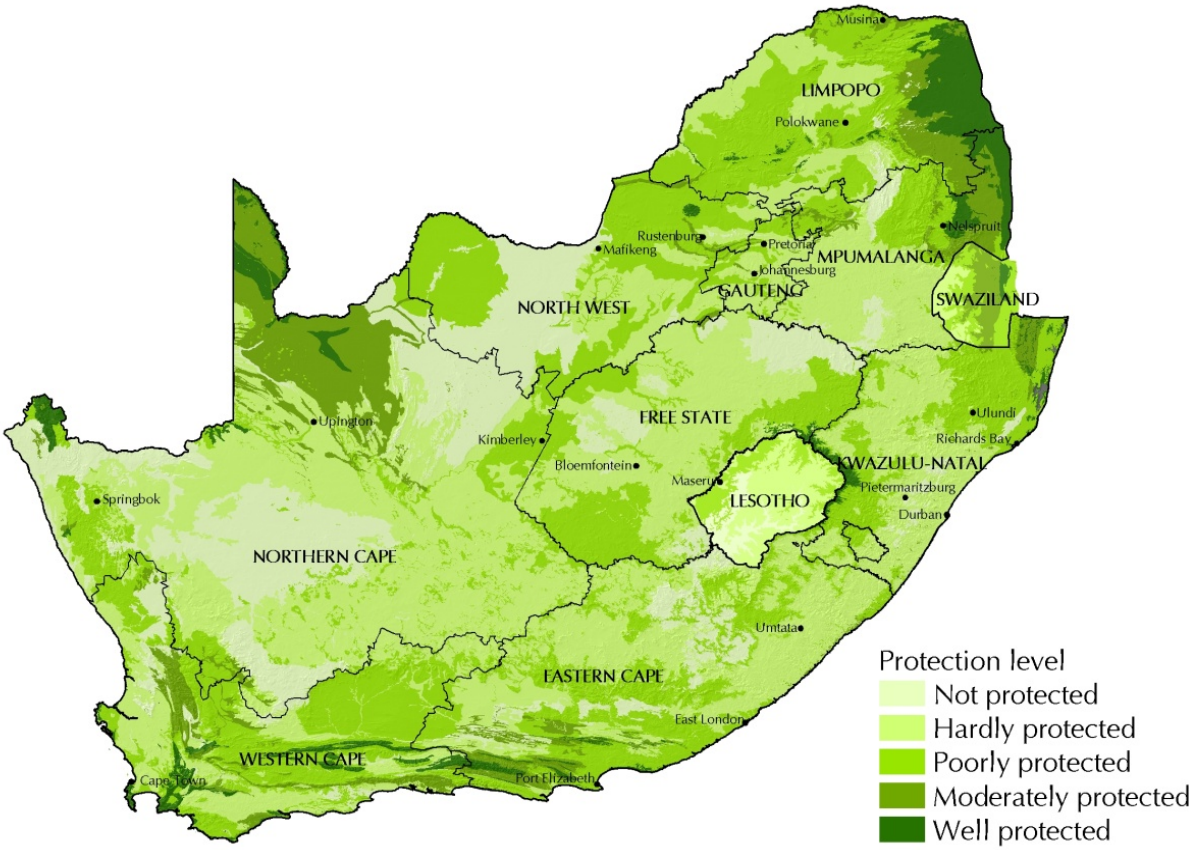


Figure 2: Map of the level of protected conservation areas within South Africa (DEA 2007)

The topic of land has often been cited to be a sensitive issue in South Africa because of the history surrounding land and the reform process. A major problem which has surfaced in recent years is that of land reform in conservation areas. In the Western Cape, the CFR is recognised as the centre of biodiversity (Cowling and Pressey 2003: 1). The CFR covers a total area of 87 892 squared kilometres and is recognised as a global diversity hotspot for all the species of plants and animals it supports. According to Stoll-Kleeman *et al.* (2006: 31) the area encompasses the smallest of the six Floristic Kingdoms worldwide and supports a wide range of plant species found nowhere else.

Turpie (2003: 199) mentions that South Africa, being a biologically diverse country, contains a total of seven major terrestrial biomes. Within the Western Cape, or more specifically the CFR, the biome which stands out in terms of number of species is the fynbos biome. The levels of endemism, rarity and species

richness are what make this biome so unique, and also justifies the well-deserved title of “the hottest biodiversity hotspot in the world” (Turpie 2003: 199). The CFR has attracted international attention for a number of years already in terms of conservation programmes, while scientists and conservationists within South Africa place the matter high on the agenda of these programmes. Yet Turpie (2003: 200) found that national support for the conservation area is dwindling as other social needs became more demanding and serious. Turpie (2003: 200) further indicates that over the next fifty years, significant biophysical impacts as a result of climate change can be expected in South Africa. This is a serious problem as the hotspots might then cease to exist. Biodiversity is also under threat from other factors, which incorporate land conservation and invasion of exotic species. The latter factor is a costly endeavour in terms of conservation programmes which are required. In view of what has been stated on the importance of conservation, it should be noted that the CFR is also home to 1 406 Red Data Book plant species, and is well known as being one of the highest known concentrations in the world of such types of species (Cowling *et al.* 2003: 193; Clerici *et al.* 2006: 32).

Blamford *et al.* (2003: 435) have also provided significant information on these problems and add that “the global significance of the CFR is reflected in its listing as one of 25 terrestrial biodiversity hotspots, as a Global 200 Ecoregion, as a Centre of Plant Diversity, and as an Endemic Bird Area. Yet it is also highly threatened. Over a quarter of the region has already been converted to intensive agriculture (including forestry), and a further three percent is either urbanised or heavily infested with alien plants; it is not known how much more has been degraded by low intensity but widespread grazing”. Cowling and Pressey (2003: 2) indicate that the CAPE project was in 1998 created from the need for a comprehensive conservation plan which involved realistic and effective implementation strategies. The CAPE project sought “to identify and establish a representative system of conservation areas; to ensure sustainable yields from biodiversity-based resources; and to improve conservation-related policies and legislation and strengthen the capacity to improve these: (Younge and Fowkes 2003: 16; Cowling and Pressey 2003: 2).

CAPE was launched in 1998 with the aim of protecting the CFR’s biodiversity (Lochner *et al.* 2003: 29). The first stage of CAPE was an analysis of the current state of biodiversity in the regions of terrestrial, marine and freshwater ecosystems. The team designing the CAPE strategy consisted of both professional and experienced consultants and representatives of implementing agencies. This was to ensure that all role-players were represented and properly involved in the development and implementation of the strategy and programme. The combined top-down and bottom-up methodology by designing an approach to strategy formulation which was informed by local requirements and international experiences in conservation planning. Public participation is an important part of the management process.

Gelderblom *et al.* (2003: 292) list the three broad themes in that the overall strategic goals identified by the CAPE action plan. These include, firstly, the protection of biodiversity in priority areas, through the establishment of an

effective reserve system, and the strengthening of off-reserve conservation. Second is the promotion of sustainable use of biodiversity to protect ecosystem services, especially the delivery of water from mountainous areas, improving harvesting techniques for both terrestrial and marine resources, and promoting sustainable nature-based tourism. The final strategic goal was the strengthening of institutions, and the promotion of co-operative governance and community involvement in conservation

4.2.1. The Origin and Evaluation of the Biosphere Concept

In order to understand the concept of biodiversity and biosphere reserves, it is important first to discuss where the concept originated from and how it developed. There are several phases through which the concept of reserves has developed that are worth mentioning. The concept of biosphere reserves and biodiversity in South Africa originates from these several developmental phases.

The concept of biodiversity first originated and developed as an intergovernmental research programme in the form of the United Nations Educational, Scientific and cultural Organisation's (UNESCO) Man and the Biosphere (MAB) programme launched in 1968 at the Biodiversity Conference (Price 2002: 13; Rabie 2005: 78). However, an important factor to clarify is that the biosphere reserve concept itself did not emerge at the Biodiversity Conference; it emerged in 1971, three years later in a rather unclear form that left its nature and role unspecified. The main objective, which was clear, was to achieve maximum global bio-geographical cover of conservation in representative ecosystems (Rabie 2005: 78). According to Price (2002: 13) one of the greatest successes of the MAB programme, and the current primary focus of the programme, has been the development of the concept of biodiversity reserves, which was directly implemented through the World Network of Biodiversity Reserves.

The main purpose of the MAB programme is to reconcile potentially conflicting goals and conserve biological diversity, as well as promote human development. Biosphere reserves are sites where there is a balanced relationship between the biosphere and humans, which are promoted, practically demonstrated, and properly and formally implemented (Rabie 2005: 81). The MAB programme is essentially an intergovernmental programme for promotion by governments to give more protection to the environment and natural resources.

Over the next three decades significant changes took place in the focus areas of biodiversity and biosphere reserves. Important events include, firstly, the biosphere reserve network launched in 1974 by the MAB programme of UNESCO's task force. By 1981 biosphere reserves had grown to cover 208 reserves in 58 countries (Rabie 2005: 78). Also, in 1974, according to UNESCO (1995, as cited in Price 2002: 13), apart from the biosphere reserve concept being published, two major objectives came into being as a result of the biosphere reserves: conservation and ecological research. The concept of core biosphere reserve zones further generated the concept of buffer zones. The primary focus here was

on the management of ecological resources and the possibilities for tourism, educational programmes, or any other purpose which could be used to foster and promote the conservation and appreciation of the biomes in question. The purpose of core and buffer zones for biosphere reserves was expected to provide adequate protection over a long period of time.

According to Matysek *et al.* (2006: 87), "a core area forms the centre and is an area (or set of multiple areas) meant to secure long-term protection from development, ideally by legal means. One or more buffer zones surround the core, and in these, activities compatible with the objectives of the core may be carried out. An outer transition area, also referred to as the zone of co-operation, is devoted to the promotion and practice of sustainable development and may include diverse land uses and activities". Rabie (2005: 82) holds similar views on zones and states that "biosphere reserves comprise three different, but inter-related, multi-functional territorial components that serve to complement each other". These include:

> one or more core area(s): legally protected sites of sufficient size where the conservation of biological diversity is the primary aim. It should encompass a mosaic of ecological systems representative of major bio-geographic regions. Non-disruptive, non-consumptive land-uses that are compatible with this aim, such as certain recreational and educational activities, as well as research are allowed. A buffer zone (or zones) that surround or adjoin the core area(s) and where land-use practices must be compatible with the aim of the core area which it must support or buffer. In addition to activities that may be undertaken in core areas, land-uses such as specific sustainable agricultural practices may be allowed.

The final area (Rabie 2005: 82) is a flexible, outer transition area "that may contain a variety of agricultural practices and human settlements, including industry and other disruptive land-uses and where resource management practices must comply with the philosophy of sustainable development". This transition area may also have other uses in which local communities, scientists, management agencies, non-governmental organisation, economic interests, cultural groups and other stakeholders work together to be able to manage and develop the area's resources in a sustainable way (Hontelez 2005). Rabie (2008: 82) further explains that the core-buffer-transition areas concept should be viewed more as 'ripples on a pond' rather than water-tight categories, even though the zones are distinguished as they represent conservation areas but the levels of conservation differ in intensity. Various zones do not consist of interdependent regions, and therefore individual biosphere reserves should not be regarded as separate. Rather, they should be viewed as being connected and inter-linked with their surrounding regions and their developments (UNESCO 1995b; UNESCO 2009; Rabie 2005).

The second event in the formation of the biosphere and biosphere reserve concept is the creation of the 'Action Plan for Biosphere Reserves' which came about in 1984. This occurred due to UNESCO and the United Nations Environmental Programme (UNEP) assembling at the First International Biosphere Reserve

Congress in co-operation with the Food and Agricultural Organisation of the United Nations (FOA) and the World Conservation Union (IUCN) in 1983. Much of this Action Plan for Biosphere Reserves remains valid today; however, the context in which biosphere reserves operate has changed considerably, as the UNCED (United Nations Conservation and Environmental Development) has shown (UNESCO 1984: 2, as cited in Price 2002: 14). According to UNESCO (1986: 72, as cited in Price 2002: 14), three functions, which are still applicable today, emerged as concerns that need to be combined and synchronised. These include conservation, logistics (international research and monitoring), and development. The reason for conservation is that "biosphere reserves should help to strengthen the conservation of biological diversity, generic resources and ecosystems". The reason for logistical functions is that "together, biosphere reserves should constitute a well-identified international network of areas for research and monitoring directly related to MAB field activities, making the accompanying training and information exchange". The reasons for development concerns are that "biosphere reserves should associate environmental and land and water resources development in their research, education and demonstration activities" (UNESCO 1986: 72, as cited in Price 2002: 14).

During the mid-1980s, according to Matysek *et al.* (2006: 87), human activities led to more emphasis being placed on environmental and biosphere changes. The shift in importance caused the World Network to change in that members endeavoured to alter and expand the local knowledge, skills and attitudes needed to be integrated into conservation as well as the economic uses of ecosystems. The third event to occur happened in 1987 with the World Commission on Environmental and Development Report, also known as the 'Brundtland Commission Report' (Sharma and Vredenberg 1998: 729). Here the term 'sustainable development' was coined and projected a positive outlook and role in furthering the cause of environmental protection by various business corporations, organisations and especially the state. The Brundtland Commission Report raised concerns about the management of the environment. The Commission Report provided a definition which stated that "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Dresner 2002: 67). Crucial elements of sustainable development identified by the Brundtland Commission Report include meeting the principles of intragenerational and intergenerational equity, basic needs, and recognising environmental limits.

The fourth event to occur after the launch and improvement of the biosphere reserve and biosphere concepts was the Earth Summit in Rio de Janeiro in June 1992. Here the Convention on Biological Diversity was signed, and as of December 1993 came into force and has been approved and authorised by more than 100 countries. According to Wynberg (2002: 233) and as mentioned in the previous chapter, post-Rio changes directed at conservation and the management of biodiversity in South Africa have been substantial and have mainly come about through decentralisation.

The fifth event is the International Conference on Biosphere Reserves, organised by UNESCO that took place in Seville, Spain from 20 to 25 March 1995 (UNESCO

1995a: 4). Two major documents stemmed from the conference. The first was the Seville Strategy and the second was the Statutory Framework of the World Network of Biosphere Reserves, otherwise known just as the Statutory Framework (Price 2002: 14). These two strategies, according to Matysec *et al.* (2006: 87), were used to explain and publicise the purposes and requirements of the network for individual reserves as well as of the network as a whole. The Seville Strategy, as Price (2002: 14) explains, set out a vision for the twenty-first century for biosphere reserves and provides a total of 92 recommendations, each having implementation factors. UNESCO (1995a: 4), in their documentation of the Seville Strategy for Biosphere Reserves, mention that the Seville Strategy adopted a two-pronged approach from the conference. These are "to examine past experiences in implementing the innovative concept of the biosphere reserve; and, to look at the future to identify what emphases should now be given to their three functions of conservation, development and logistical support".

The Statutory Framework provides the apparatus to promote and support those who are responsible for the management of biosphere reserves to keep up to date with the ever-evolving concept. Rabie (2005: 81) states that:

> "the Statutory Framework encourages States to examine and improve the adequacy of existing biosphere reserves and to propose appropriate extensions to enable it to function fully in the international network. Furthermore, provision is made for periodic review every ten years of the status of each biosphere reserve. Such review, prepared by the authority concerned, is to be based upon the criteria prescribed by the Statutory Framework for designation as a biosphere reserve".

The sixth and final event to occur after the development of the biosphere reserve and biodiversity concepts was the Johannesburg Summit in 2002. According to Beyerlin (2002: 1), there were certain expectations for this summit as ten years after the Rio summit problems and challenges in the forms of epidemic poverty, unsustainable lifestyles and environmental degradation confront the world. A key focus area of the Johannesburg Summit was expected to be strengthening governance for sustainable development on an international level. The United Nations released a report after the Johannesburg Summit on sustainable development in 2002 on what was achieved as well as indicating the way forward (UN 2002).

Rabie (2005: 80) states that under UNESCO's MAB programme, biosphere reserves are internationally recognised and defined in a formal sense as areas comprised of terrestrial, coastal or marine ecosystems, or combinations of these types of areas. The National Environment Management: Biodiversity Act (No.10 of 2004) defines biodiversity as "the variability among living organisms from all resources including terrestrial, marine and other aquatic ecosystems and the ecological complexities which they are part and also includes biodiversity within species, between species and of ecosystems". The MAB programme lists seven main characteristics of biosphere reserves:

- Biosphere reserves are characterised as having a zonation pattern for conservation and development;
- They focus on a multi-stakeholder approach, with particular emphasis on the involvement of local communities in management;
- They include a tool for conflict resolution regarding natural resource use through the development of dialogues;
- There is integration of biological diversity and cultural diversity, especially the role of traditional knowledge in ecosystem management;
- There are founded on sound policies based on research and subsequent monitoring;
- Biosphere reserves are sites for education and training; and
- They participate in a world network.

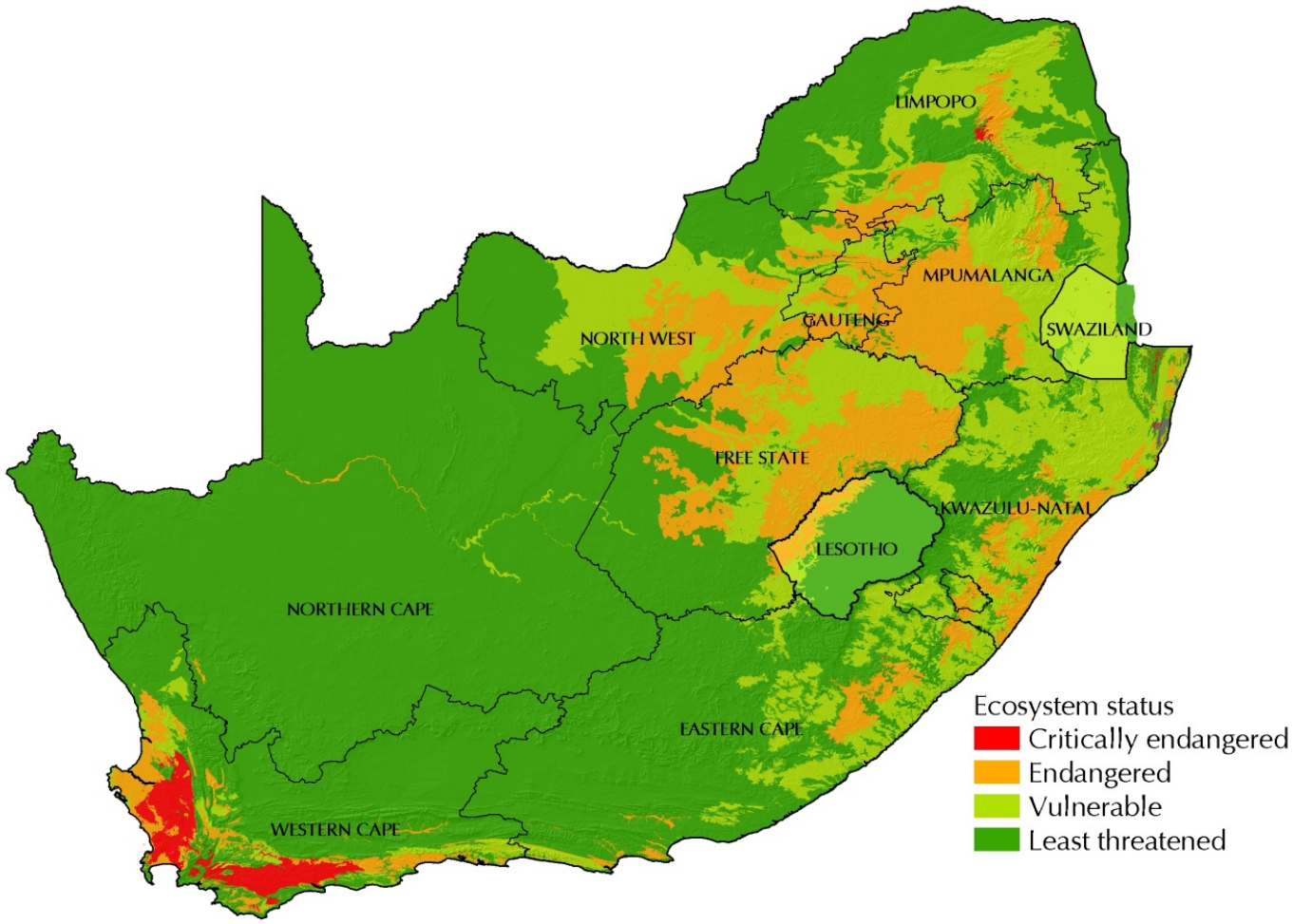


Figure 3: Status of Terrestrial Ecosystems in South Africa (DEA 2007)

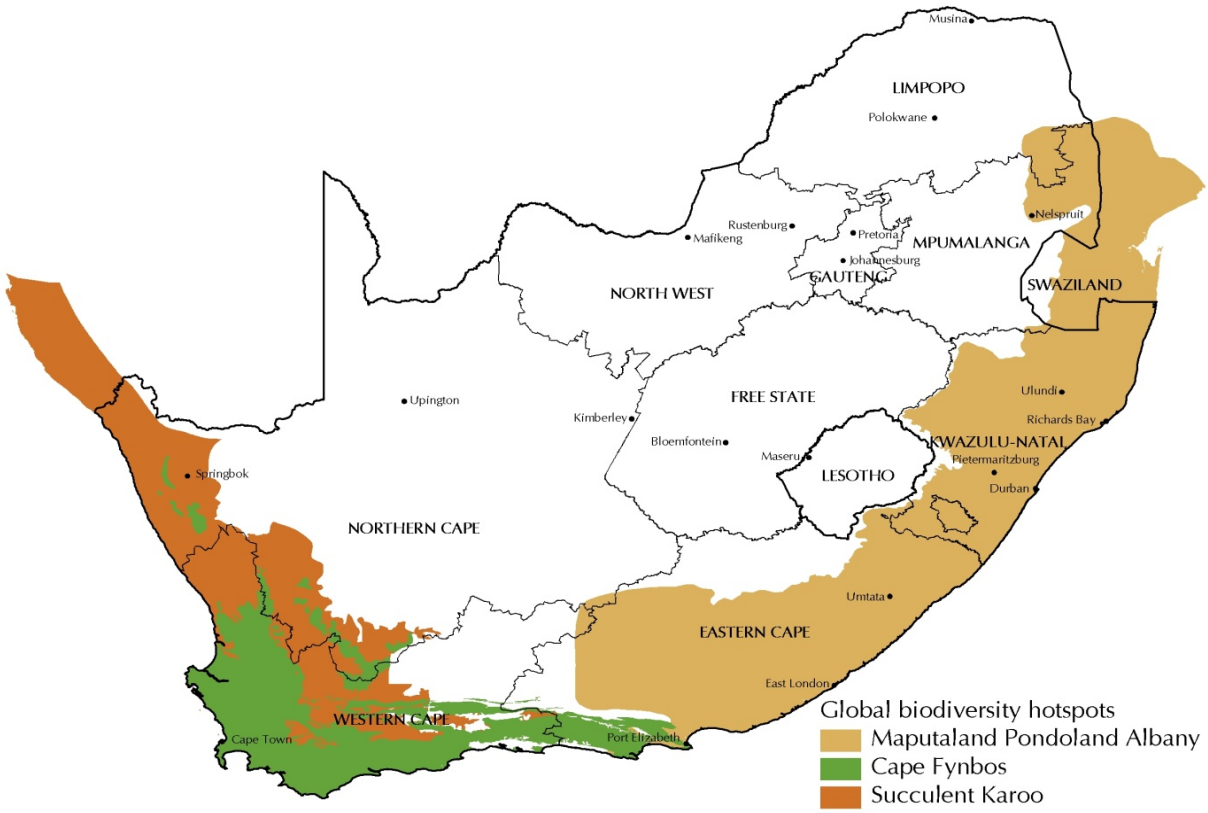
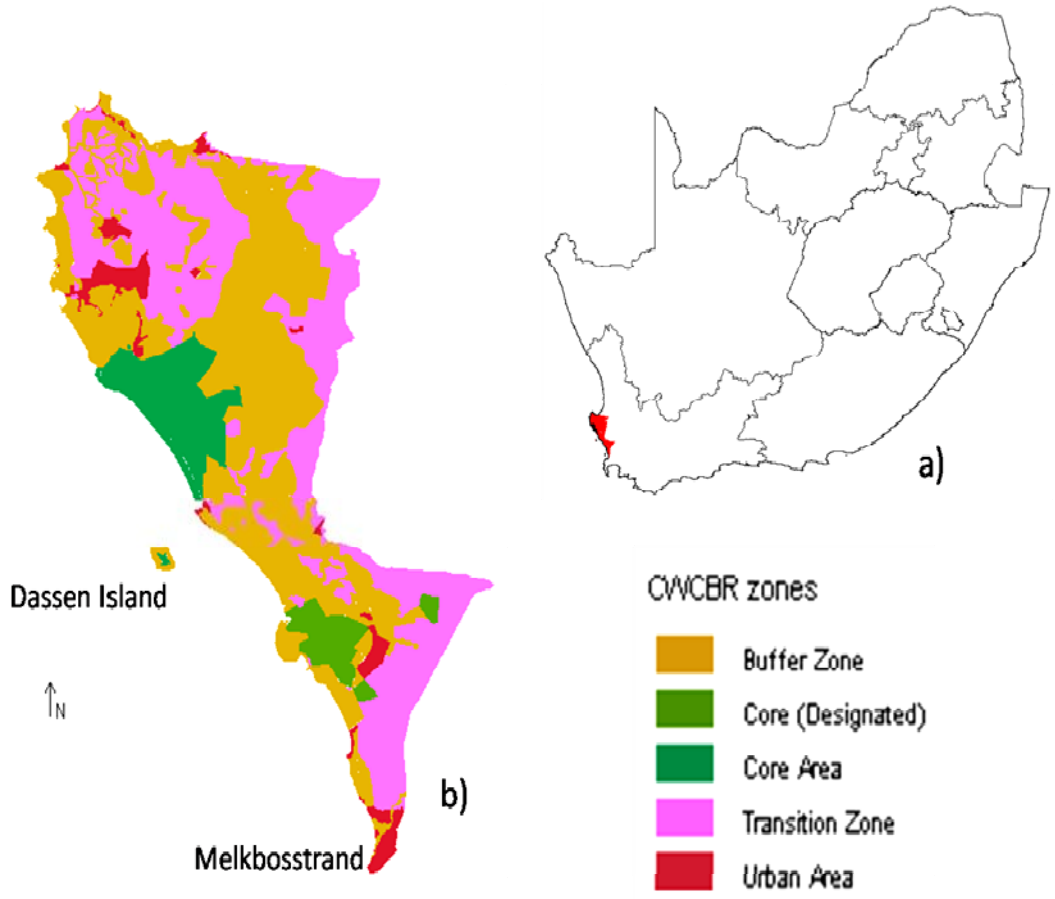


Figure 4: Biodiversity Hotspots in South Africa (DEA 2007)

The next section, the case study of the Cape West Coast Biosphere Reserve, will examine one of three biosphere reserves in the Western Cape, along with its vision, mission, goals, objectives and frameworks.

4.2.2. Cape West Coast Biosphere Reserve

As previously mentioned, the Cape West Coast Biosphere Reserve (CWCBR) was founded in 2000. The biosphere is situated in the Western Cape, starting in Cape Town in the southern suburb of Milnerton Diep River and stretches as far as the Berg River up the West Coast (UNESCO 2009; *Cape Biosphere* 2009). The reserve covers 378 000 hectares in total of coastal lowland plains. The area encompasses part of the CFR, and includes the Ramsar-protected Langebaan lagoon as well as Dassen Island, where a penguin colony resides. According to the *Cape Biosphere* (2009), the reason a biosphere is needed here is that population numbers are increasing rapidly in Cape Town and people are moving in the direction of the West Coast. The transition zone of Cape Town – including urban, industrial and agricultural uses – is pushing into the buffer zone and causing conflict. This transitional zone or area and the core area of the CWCBR, comprised of terrestrial, marine and aquatic natural ecosystems, need careful planning and management to ensure more socioeconomic growth and less conflict (*Cape Biosphere* 2009).



a) The Cape West Coast Biosphere Reserve in relation to the Western Cape and South Africa
b) The Cape West Coast Biosphere Reserve and the zones which comprise it

Figure 5: Cape West Coast Biosphere Reserve (Vardien 2010)

The *Cape Biosphere* (2009) issued a statement on the vision of the CWCBR: "We see the CWCBR as the best international example of integrated rapid growth and change with biodiversity conservation, sustainable living and heritage preservation". The *Cape Biosphere* (2009) further states that the main aim of the Cape West Coast Biosphere Reserve is to "foster human development that is ecologically sustainable; conserve the landscapes, vegetation and species of the West Coast; and to lend support for research, monitoring, education, information exchange related to local, national and global issues of conservation and development". The *Cape Biosphere* (2009) sets out a list of objectives that were formulated for the CWCBR by the Strategic Plan. The main purpose of these objectives is to find a means and method of conserving biodiversity effectively and efficiently so as to create positive outcomes. Another purpose is to promote and stimulate development in a sustainable way. The objectives were set out over a course of five years and were seen as long term in connection with the management framework for the CWCBR.

The objectives (and goals) according to the *Cape Biosphere* (2009) are as follows:

- To ensure effective, participatory and adaptive management of the CWCBR;
- To develop a high-profile biosphere reserve with environmentally aware and informed stakeholders;
- To contribute towards furthering sustainable development in the biosphere reserve;
- To contribute towards understanding of the unique assets of the biosphere reserve;
- To contribute to coherent planning at all levels within the area; and
- To contribute to the conservation of the unique assets of the biosphere reserve.

The goals developed by the CWCBR can be divided into five main themes: Conservation Goals and Objectives; Sustainable Development and Planning Goals and Objectives; Stakeholder Interaction Goals and Objectives; Research and Monitoring Goals and Objectives; and Operational and Institutional Goals and Objectives (*Cape Biosphere* 2009).

The vision statement sets the stage for the zoning areas of the CWCBR. As discussed above, zoning areas are divided into three categories: the core area, the buffer zone and the transitional area. It is necessary to mention this here as the CWCBR is separated into these three areas and it is important to understand which activities and programmes take place in which areas. In the core area, which is the official area that is protected by law, only activities and uses which do not go against the set conservation laws are allowed. These activities include environmental education activities such as field trips for schools, small-scale agriculture, snorkelling and swimming, eco-tourism, ground water extraction and subsistence fishing, to name a few. The buffer zone, around the core area, includes activities such as environmental education as well, recreation, and the investigation and observation of nature. The transition area, also known as the co-operation zone, encompasses the buffer zone and includes hosting human settlements, services infrastructure, industrial fishing, tourism infrastructure such as hotels and restaurants, and urban and commercial centres such as stores (*Cape Biosphere* 2009). According to UNESCO (2005), the total area the CWCBR is 378 240 hectares. Of this, the core area covers 47 730 hectares. The buffer zones cover 172 643 hectares, and the transition areas comprise of an estimated 157 867 hectares.

The land cover and uses in the Cape West Coast Biosphere Reserve consist of agriculture, which covers 47 per cent of the CWCBR, natural vegetation covering 25 per cent, and other vegetation including alien vegetation covers 16 per cent. Urban uses were found to cover 8 per cent of the reserve already (*Cape Biosphere* 2009). The following section discusses the management of the CWCBR in terms of planning frameworks, approaches, and projects which were formulated in order to provide better service and management to the area. The following figure illustrates the range of different land uses and the difference between the types of land uses from 1990 and 2006 (Vardien 2010).

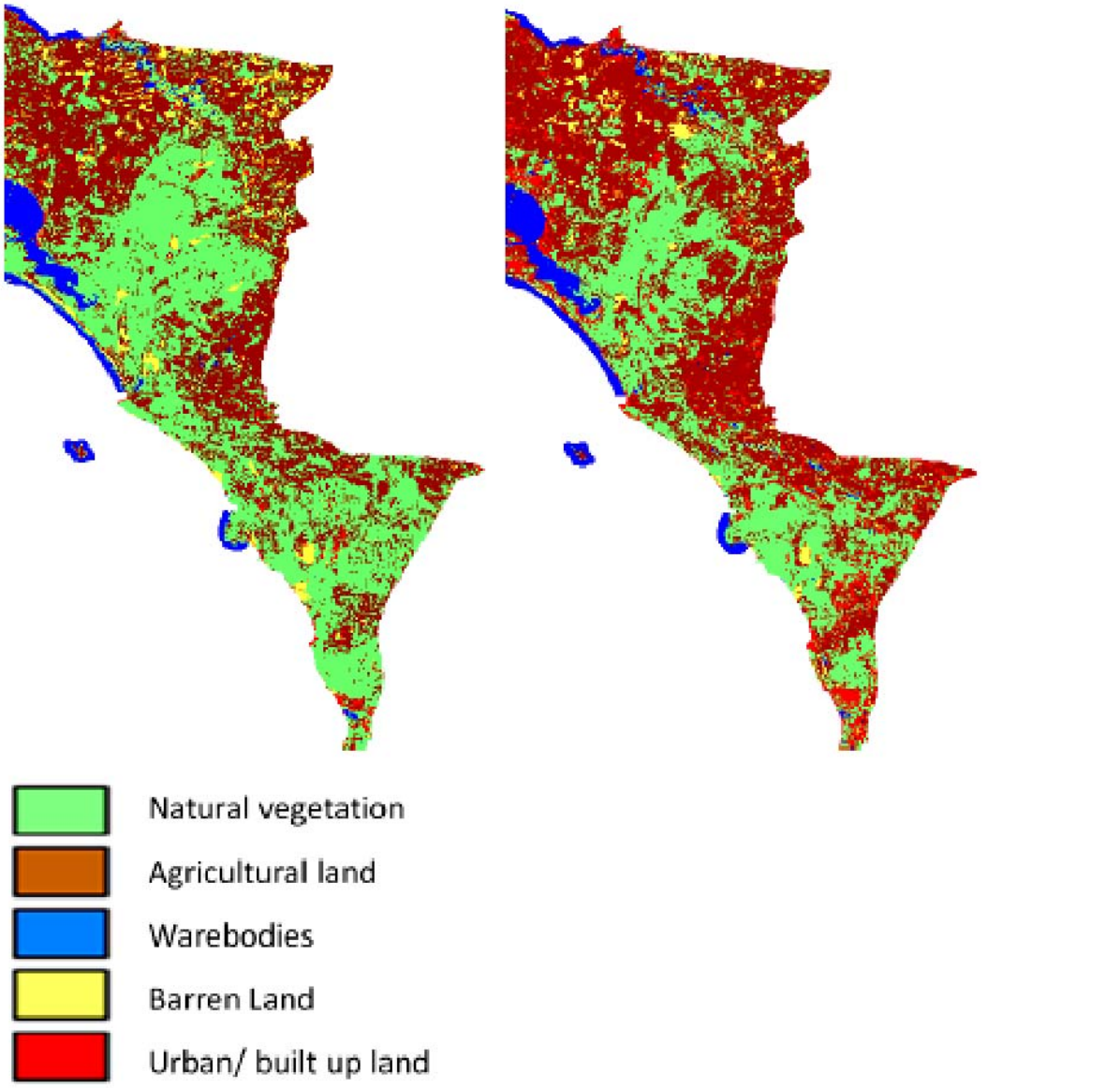


Figure 6: Land Use Maps of Cape West Coast Biosphere Reserve (1990 and 2006) (Vardien 2010)

4.2.3. Management of the Cape West Coast Biosphere Reserve

The CWCBR is a governance body which involves multiple layers of authority. These layers range from an international level right down to the local level (*Cape Biosphere* 2009). According to UNESCO (2005) the national body is the DEA, the provincial bodies are the Provincial Administration Western Cape; and the Development of Planning, Local Government and Housing. The international level incorporates the MAB programme and grants the South African biosphere responsibility yet presents no jurisdiction to UNESCO. National and provincial levels have jurisdiction which extends over the entire CWCBR, while at local level jurisdiction is exercised by four municipalities which are indicated specific areas of the reserve (*Cape Biosphere* 2009).

The Reserve is managed by the CWCBR Company and overseen by a board of volunteers (*Cape Biosphere* 2009). Individuals and organisations can obtain memberships through registering as *Friends of the Biosphere* and as members they have a say in the decisions made and developmental plans set out, as the reserve is community-orientated. Members are awarded the opportunity to pay for their membership with the sole purpose of being able to vote at a special general meeting. They are also given the opportunity to contribute ideas to projects, participate in the affairs of the Reserve and generally have a say in what happens in the Reserve. These members are offered more than just a weekend getaway or a tourist attraction site; according to the *Cape Biosphere* (2009), the membership package offers value to the member in the form of financial means, additional business of lifestyle by accommodating the needs of commercial entities as well as private individuals. The map below indicates the areas designated to the four municipal areas.

Since conservation management was applied to the area, the following programmes and conservation gains have been made and achieved according to the *Cape Biosphere* (2009):

- 953ha state-owned land was proclaimed a protected area namely the Blaauwberg Conservation Area;
- The CWCBR directly contributed to improving management within the existing 2 municipal reserves in Darling, namely Groenkloof and Darling Renosterveld Reserve through alien clearing and fencing of the area to ensure farm animals are excluded from these reserves – improving the critical state of the remaining Granite Renosterveld.

With regards to planning and development, the reserve has taken on the Spatial Development Plan which entails ensuring that development happens when and where it is supposed to so that the main focal areas remain conserved to protect the ecosystems which are being threatened. Key projects are also identified for the main purpose of stakeholders working together to make them more effective in the conservation and developmental plans they wish to carry forward. Other management strategies include education and taking on interns. With regards to education, the CWCBR offers educational camps for scholars; they include a range of activities such as hiking up Table Mountain and learning about a range of topics related to the biosphere reserve and the environment.

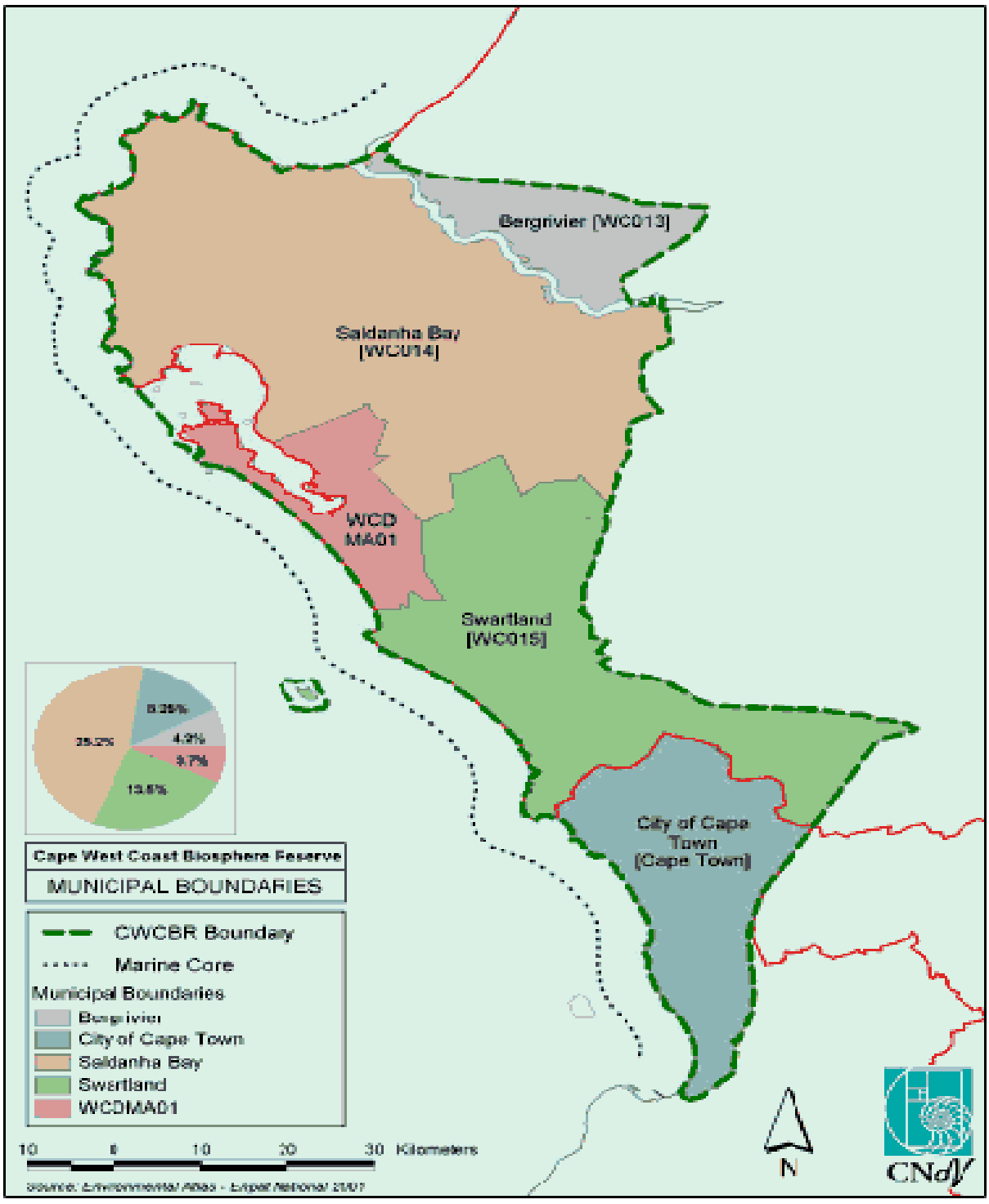


Figure 7: Cape West Coast Biosphere Reserve – Municipal Boundaries (*Cape Biosphere* 2009)

Without the help of government officials and community participation, biosphere reserves would not be able to survive as all management areas require financing. In 2009 alone the Cape West Coast Biosphere Reserve managed to secure a total of R2 687 140.00 for project and operational financing from various funders. These funders, according to the *Cape Biosphere* (2009) include: the Critical Ecosystem Partnership Fund; Global Environment Fund-Small Grants Fund; Department of Agriculture; DEA and Development Planning; SANBI; City of Cape Town; WWF

Table Mountain Fund (TMF); World Bank; Development Bank of Southern Africa (DBSA) and many others. This funding was (and still is) used either for office operational purposes or specific projects.

The following section will discuss water management within the South African context; the case study will be the Breede water management area and the management strategies set in place for the Breede River.

4.3. Water Management in South Africa

In terms of natural water resources, South Africa has a severe shortage and has not been able to provide for the basic need for water to the majority of people, who are the less advantaged sections of the population. Abell *et al.* (2007: 48) have provided significant information on the topic of fresh water systems and their protection. They indicate that as a result of the declining trends in water management, effort have been redoubled in supporting freshwater systems and the species these areas support. Strategies include a range from micro-scale restoration of individual habitats to macro-scale integrated catchment management areas. Abell *et al.* (2007: 48) also include the fact that freshwater systems are becoming increasingly scarce on a worldwide level and not only in South Africa.

The year 2003 was the International Year of Freshwater, and yet a decade after Rio the world community still faced many crises. Problems such as land degradation, food security, ecosystem decline, and poor water quality and water-flow depletion are interlinked crises that countries are facing on a worldwide basis (Hoffman and Todd 2000: 745). These crises stand in the way of solving other problems such as poverty and unsustainable development (Duda 2003: 2051). Being a dry country, South Africa and its water resources are highly likely to lead to limiting growth (Van Wilgen *et al.* 1996: 184). Demands placed on the world's freshwater supplies by human beings are increasing as populations continue to grow (Richter *et al.* 2003: 206; Wallace *et al.* 2003: 2011). The task of managing freshwater systems to meet human demands has largely been neglected as the consequences for ecosystems have been vast. Rockström *et al*. (2007: 6253) have also examined the significant relationship between population dynamics and water usage. Population growth has been found to occur almost exclusively in countries which are in the developing phase. Agriculture is one of the primary sources of economic growth in developing countries, but water management has been inadequate and water usage remains high.

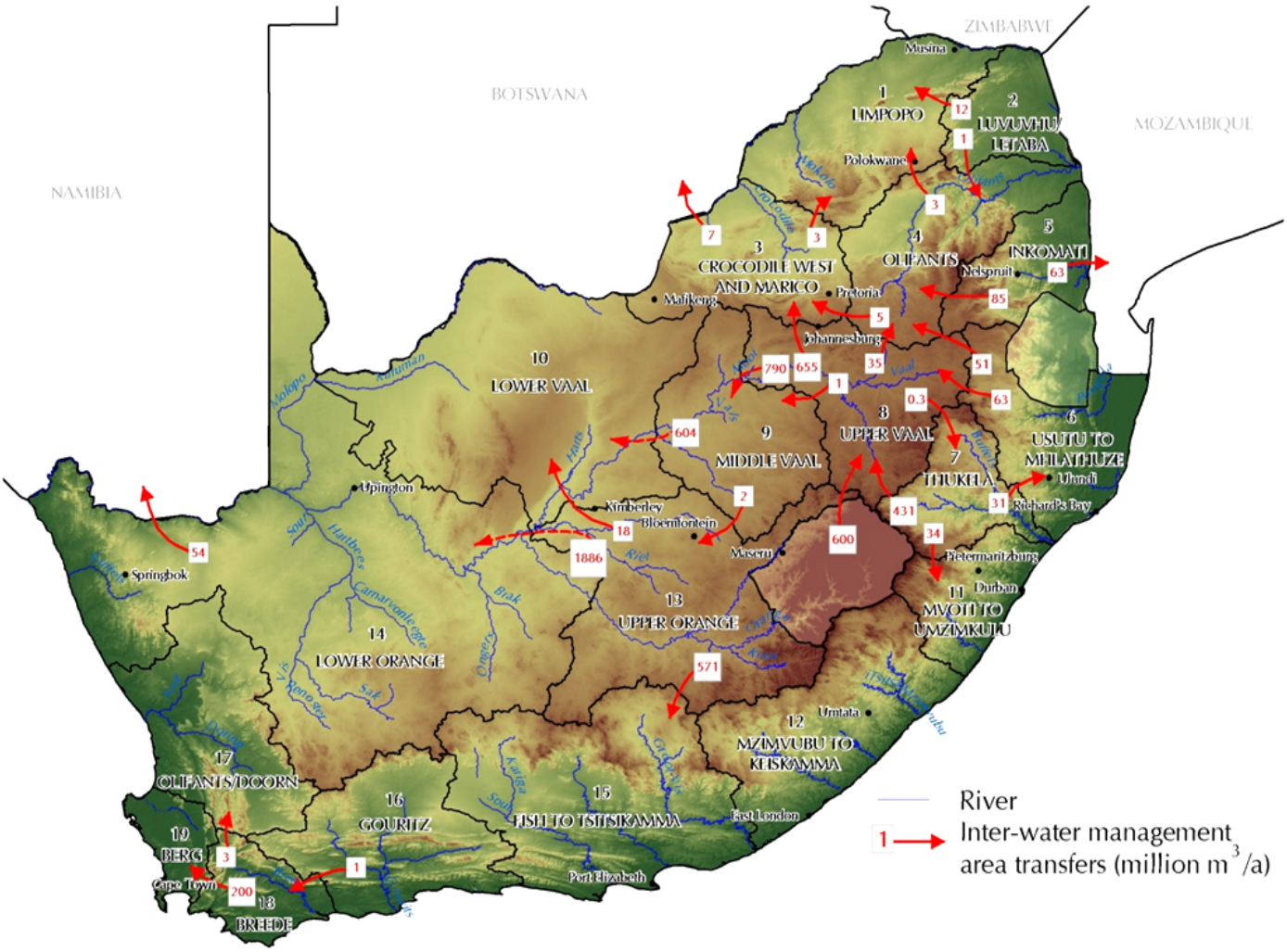


Figure 8: Water Transfer in South Africa (DEA 2007)

In order to achieve sustainability in water management areas, managing the human uses of water is an essential characteristic. Richter *et al.* (2003: 206) also mention the diversion of river-flow systems, which are linked to dam operations, is one of the three leading causes of the imperilment of aquatic animals. This has been identified as one of three leading causes, the other two being non-point source pollution and invasive species. When the natural flow regime of a river is altered too greatly, it will trigger a cascade of reactions that cause the river ecosystem to simplify over time, leading to a degraded state. As a result, many human uses, native species and other ecosystem services and products can be adversely affected. This process, developed by Richter *et al.* (2003: 208) is represented in Figure 9 below.

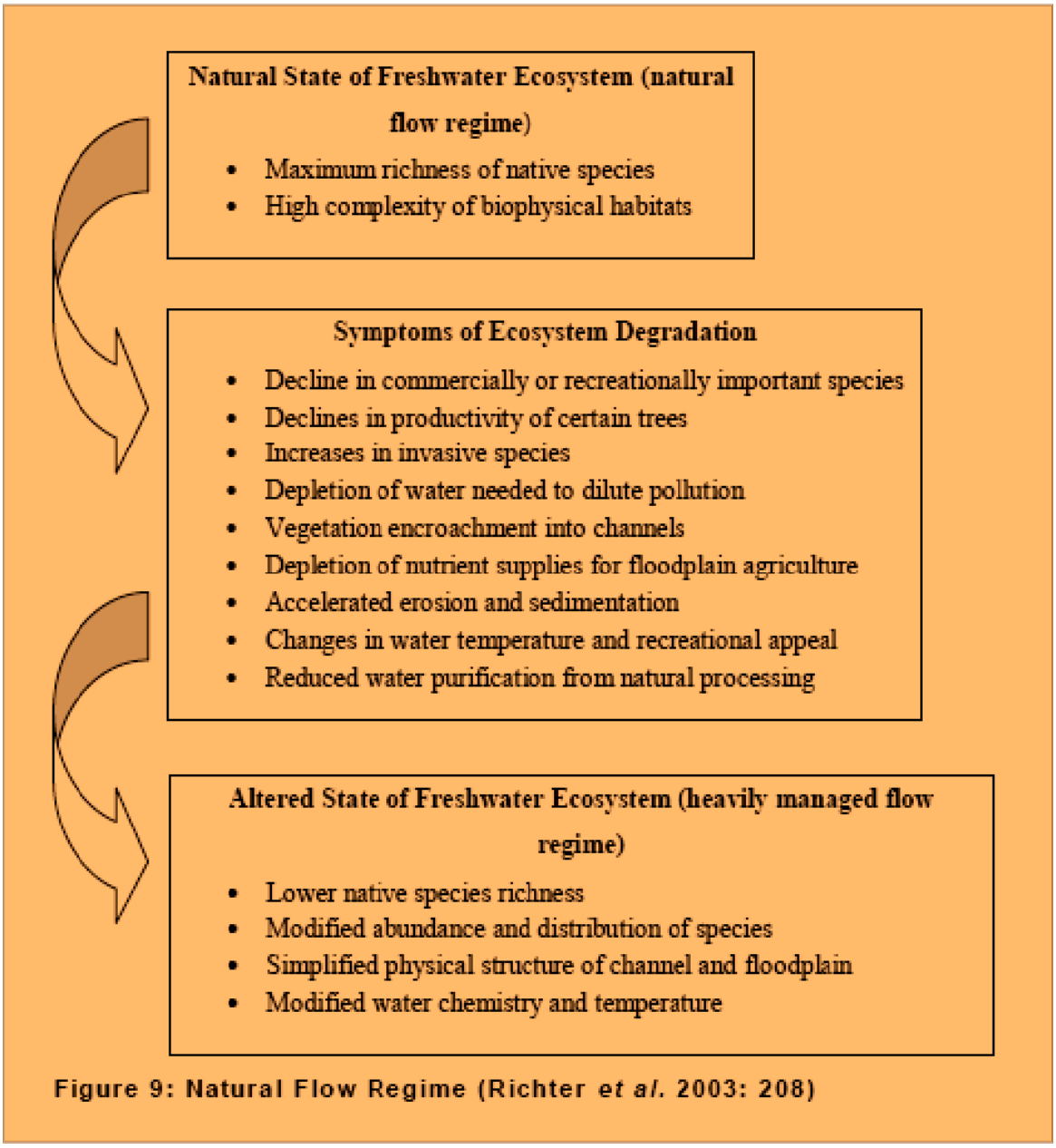


Figure 9: Natural Flow Regime (Richter *et al.* 2003: 208)

According to the DWA (2009: 6), the South African government collaborated with the Royal Danish Government (DANIDA) in 2000 to initiate a programme which would pilot Integrated Water Resources Management (IWRM) approaches in three water areas in South Africa. These water management areas were chosen for the specific reason that they represent a cross-section of water resources conditions, as well as because they represent water use conditions and user interests (DWA 2009: 6). Water management is a complex process as it does not only involve the water itself, but it also involves building community awareness, fixing taps and leaks, water harvesting and monitoring ground water, and climate change.

Surface water resources within South Africa derive from a mere 8.5% of the annual rainfall (497mm) finding its way to rivers in the form of run-off (Oosthuizen 2002: 2). The following figure depicts the status of river ecosystems in South Africa on levels varying from least threatened to critically endangered ecosystems.

This is an important factor to take note of, as rivers in the Western Cape are mostly critically endangered, and those which are not critically endangered are either endangered or vulnerable. The results shown in the map below indicate that the water management areas in the south of the country, which include the Berg, Breede and Gouritz, and those associated with the middle and upper Vaal River, are most in need of protection. This means that these rivers run the risk of irreversibly losing the ability to support their biodiversity components. These ecosystems have lost so much of their original natural habitat that ecosystem functioning has broken down and species associated with the ecosystem have been lost or are likely to be lost.

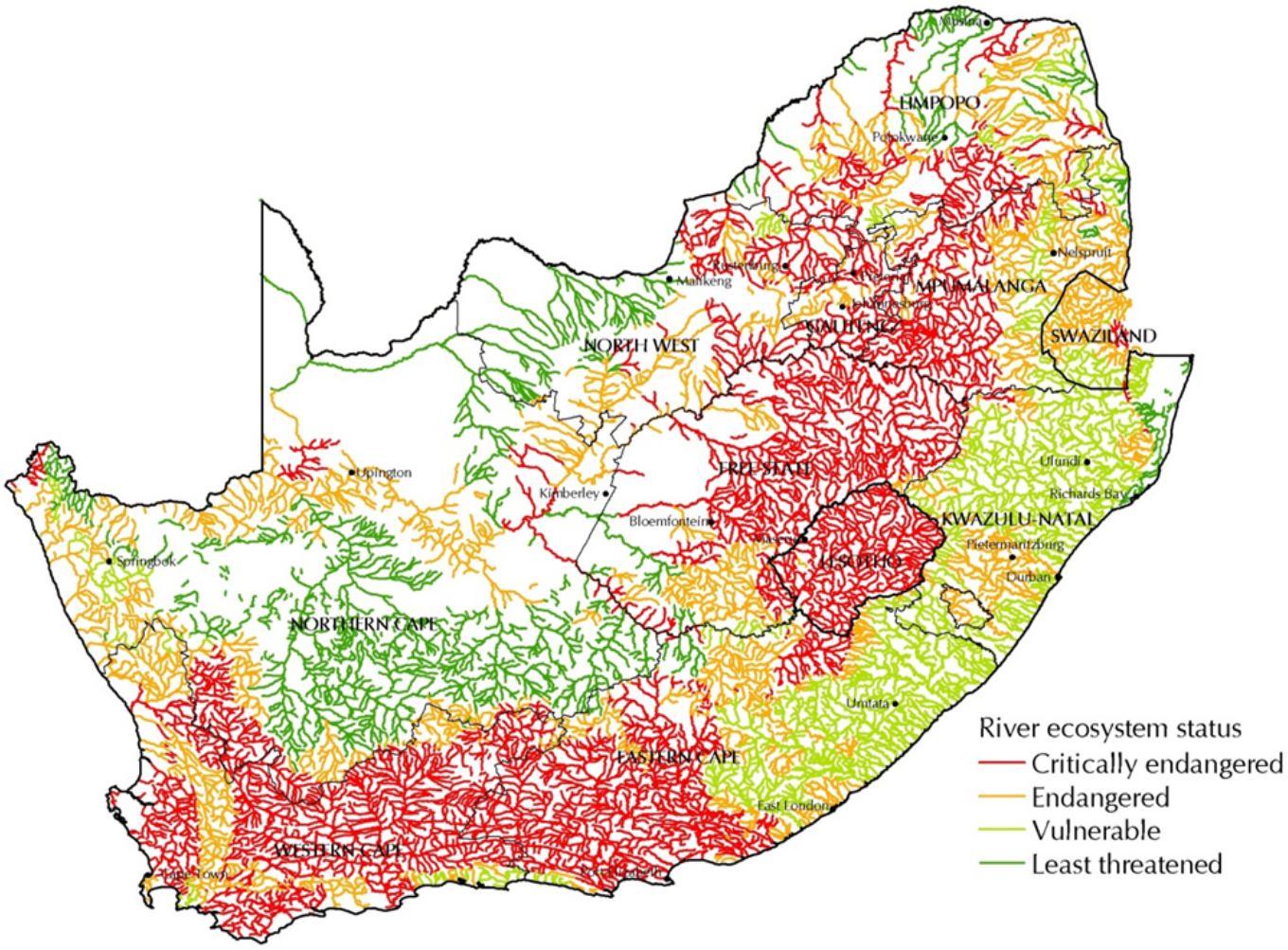


Figure 10: River Ecosystem Status in SA (DEA 2007)

Ferreyra *et al.* (2008: 304) discuss integrated water resources management (IWRM) and state that it is one of the major bottom-up alternatives which emerged during the 1980s as part of a trend towards a more decentralised and participatory style of environmental governance. Ferreyra *et al.* (2008: 306) state "to a large extent, the gap between principles and practice in IWRM is related to the inherent dualisms embedded in earlier and current conceptualisations of IWRM, which underlie most institutional strategies designed to implement this approach to environmental governance". The concept of IWRM is linked to catchment management agencies.

The DWA (2010) states with regards to catchment management agencies that

> catchment management agencies (CMAs) are statutory bodies established by a notice in the Government Gazette, with jurisdiction in a defined water management area (WMA). A CMA therefore manages water resources and coordinates functions of other institutions involved in water related matters within WMAs. A CMA begins to be functional once a governing board has been appointed, and is then responsible for specified initial functions, as well as any other functions delegated or assigned to it. The CMA governing board must represent the relevant interests in a WMA and must have appropriate community, racial and gender representation.

A WMA can be defined as an area established as a management unit in the National Water Resource Strategy within which a CMA will conduct the use, development, protection, conservation, management and control of water resources. A catchment means the area from which any rainfall will drain into the watercourse(s) or part of a watercourse, through surface flow to a common point(s).

According to the DWA (2004a), the most fundamental and indispensable of all the natural resources is water. It is one of the essential components for all beings as well as for life and the quality of life. It is a fundamental component for food protection and the environment. Water is not only a scarce resource in South Africa, but it is distributed unevenly geographically and socio-politically (DWA 2004a). Water plays an important role in meeting everyday basic needs and to managing water resources is an ongoing challenge in South Africa. In order to further the aims and aspirations of the people of South Africa, management of water resources needs to be productive and fair in an optimal way.

The main purpose of the National Water (RSA, No.36 of 1998b) is to ensure that the nation's water resources are protected, used, developed, managed, conserved and controlled. This includes meeting the basic human needs and promoting the effective, sustainable and beneficial use of water in public interest, among other reasons. The National Water Act (RSA 1998b) states that 19 Water Management Areas were established in South Africa. One of the most important functions of the National Water Act (RSA 1998b) is to set out the policy framework for water management in South Africa. The following section discusses the Breede water management area as a case study. The ultimate aim is to establish CMAs for all water management areas. The National Water Act (RSA 1998b) requires progressive development of a National Water Resource Strategy which was established in 2005 (DWA 1999: 1). The Resource Strategy provides a framework for the protection, use, development, management, conservation and control of water resources for the country as a whole. It also provides a framework within which water will be managed at regional or catchment level in defined WMAs (DWA 1999: 1).

The National Water Act (RSA 1998b) mentions that in order to propose the establishment of a CMA, a few factors need to be included in the proposal. These necessary requirements include a proposed name and description of the proposed

WMA of the agency; a description of the significant water resources and information about the existing protection, use, development, management, conservation and control of those resources; proposed functions of the CMA; how the proposed CMA will be funded; the feasibility of the proposed CMA in respect of administrative, technical and financial matters; and an indication of whether there has been consultation in developing the proposal as well as the results of the consultation.

As mentioned above, the National Water Act (RSA 1998b) states that a CMA must establish a catchment management strategy (CMS) for the protection, development, conservation, use, management and control of water resources within its WMA. A CMS may be established in a phased and progressive way and in separate components over time, and it must be reviewed at regular intervals of no more than five years. A CMS, or any component of the strategy, may only be established with the written consent of the Minister of Water Affairs. According to the National Water Act (RSA 1998b), a CMS must take into account the class of water resources and resource quality objectives, the requirements of the Reserve involved, and international obligations where applicable. A CMS may not be in conflict with the National Water Resource Strategy for any reason. A CMS must also set out the strategies, objectives, plans, guidelines and procedures of the CMA for the protection, use, conservation, development, management and control of water resources within its WMA. It also needs to take into account the geology, demography, land use, climate, vegetation and waterworks within its WMA (RSA 1998b). Lastly, a CMS needs to take into account the needs and expectations of existing and potential water users as well as set out the institutions to be established.

In order to determine a WMA, the National Water Act (RSA 1998b) prescribes that the Minister of Water Affairs at the specific time must take into account factors such as watercourse catchment boundaries; social and economic development patterns; efficiency considerations; and communal interests within the area in question. Therefore two considerations are important in determining the boundary of a WMA: the natural hydrological boundaries; and the potential for achieving the CMA's financial viability in the medium to long term (DWA 1999: 2). The following section discusses the Breede WMA in South Africa as the case study.

4.3.1. Breede Water Management Area

The Breede WMA is situated in the Western Cape Province and is bounded by the Berg, Oliphants/Doorn and Gouritz WMAs in the west, north-west and east respectively, and the Indian Ocean to the south. The Breede WMA can be divided into two specific regions from a water resource management perspective – the Breede River component and the Overberg component (DWA 2004b).

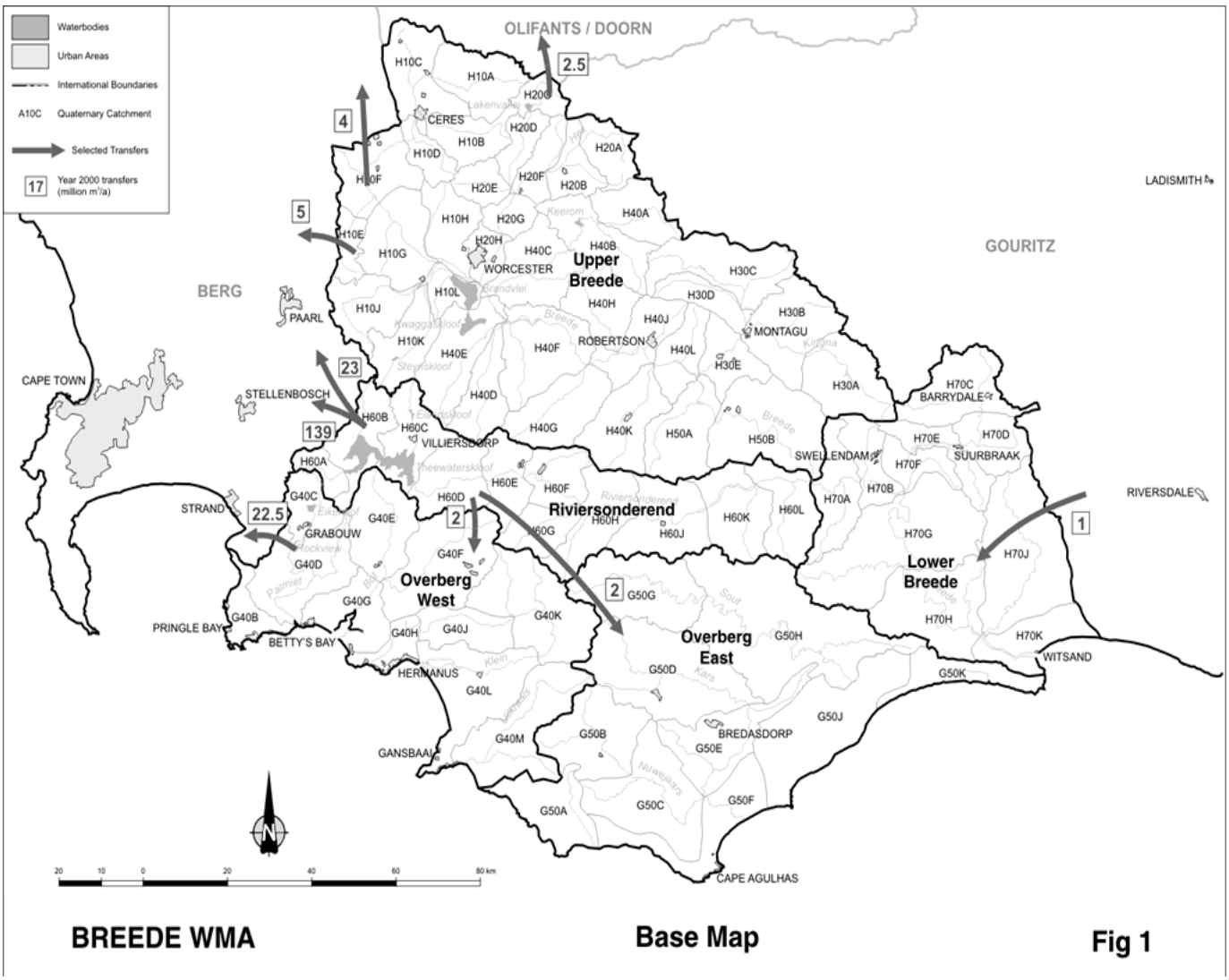


Figure 11: Base map of the Breede water management area (DWA 2004)

As mentioned in Chapter One, the Breede River is the largest river in the Western Cape and provides for a large number of people in terms of supporting activities, providing economic benefits as well as promoting tourism potential. The Breede River has a total catchment area of 12 600 square kilometres. It is situated roughly 250 km from Cape Town and originates in the Ceres Valley. The National Water Resource Strategy (DWA 2004b) states:

> The Breede water management area is the southern-most water management area in South Africa and lies entirely in the Western Cape Province. The climate in the area varies considerably. In the western mountainous regions rainfall can exceed 1 500 mm/a, while in the lower eastern parts of the area the rainfall decreases to about 300 mm/a. Rainfall occurs mainly during the winter. The greater part of the water management area is drained by the Breede River and its main tributary, the Riviersonderend River. Several small coastal rivers drain the southern part of the water management area, while vleis with no outflow to the sea are found in the south-east. The lower Palmiet River and the vlei areas are of high conservation importance.

Operation of the Breede River during the winter months includes water collection by means of storage dams for subsequent dispersal during the summer months. These dams include the Brandvlei and Theewaterskloof, amongst others. The DWA (2004b) mentions that the demographic projections from their studies have shown that population numbers are increasing in the coastal areas but declining in the inland areas. The DWA (2004b) further mentions, regarding temperature and water, that the mean annual temperature varies between 17°C in the east to 15°C along the south-west coast, with an average of 17°C for the whole WMA. Maximum temperatures are experienced in January (average daily maximum = 37°C) and minimum temperatures usually occur in July (average daily minimum = 0°C). Frost occurs throughout the WMA in winter, typically between mid-May and late August. Most of the rain falls between the months of May and August over most of the WMA. An all year round rainfall pattern prevails in the far south-east. Occasional snowfalls occur on the mountains in the south-west and north-west of the WMA during most winters. The aerographical influence of the high mountain ranges introduces large spatial variability in the mean annual precipitation. In the high mountainous regions in the south-west, the maximum mean annual precipitation exceeds 3 000mm, but rainfall is as low as 250mm in the central and north-eastern Breede River valley and other interior valleys. The average potential mean annual evaporation (measured by S-Pan) ranges from 1 200mm in the south to 1 700mm in the north of the WMA.

Currently there are only two CMAs in South Africa, namely the Nkomati CMA and the Breede-Overberg CMA (BOCMA), the latter being the larger of the two. The BOCMA was established mainly to manage the given water resources in a responsible way. This is done through continuous interaction and engagement with the various stakeholders in order to make the decision making process as effective as possible from top to bottom levels of management. The BOCMA was established in 2005 by the Minister of Water Affairs in accordance with the National Water Act (RSA 1998b). In October of 2007 the governing board was nominated and appointed, thus rendering the CMA operational. Along with the role of water management, the BOCMA plays a central role in the protection, development, usage, management and control of water resources. Furthermore, the CMA plays a central role in the coordination of water resource matters in national, provincial and local government along with a variety of second partners and stakeholders. The fundamental challenge for the area, apart from primarily conserving and maintaining the water resource, is to support social compensation and economic development, all the while maintaining the environmental functions of the naturally important aquatic ecosystems (Breede-Overberg Catchment Management Agency 2011). The board members, being 13 in number, were all appointed by the Minister of Water Affairs. The envisaged final staff count will optimally be at 27 members. The BOCMA is currently in the developmental process of creating a CMS, the draft of which came out February 2011. The BOCMA engaged with the various stakeholders in the WMA to facilitate this strategy. While the BOCMA is the leading agent for water resource management, it needs to be noted that the CMA cannot alone be responsible for all the implementation actions.

The CMS is a developmental cornerstone in the responsibility of the CMA, and will thus be gazetted as a statutory document, which is in turn binding on the Minister of Water Affairs and the BOCMA (Breede-Overberg Catchment Management Agency 2011). The aims and objectives for the Breede CMS include: ensuring

water quality for all people and the environment; addressing water allocation reform; ensuring good administration of registration and licensing as well as inspiriting change in attitudes towards the environment; and promoting economic growth in a sustainable manner. These aims and objectives are intended to address the developmental needs of the people and can contribute to the eradication of poverty. They are also intended to ensure fair, equitable and well-controlled water allocation, all the while maintaining the integrity of the surrounding natural resources. Other aims and objectives include allowing stakeholders a voice in how the water resources are managed, and to manage the ecosystem in a sustainable manner. The following section discusses the management in the Breede River in more detail.

4.3.2. Management of the Breede Water Management Area

Management of water areas is often seen to be difficult as it is essential to involve all stakeholders. According to Sherwill *et al.* (2007: 505), catchment management agencies can not directly manage water areas for each individual stakeholder. Achieving a bottom-up approach in terms of participatory management is a key aspect in the management of water sources. The DWA (2004b) lists several considerations for water management: Priority considerations in respect of water resources management in the Breede water management area include: improvement of irrigation efficiencies; the management of salinity levels in the Breede River; and the improved management of groundwater abstraction. Greater knowledge is needed of aquifer and recharge characteristics and in particular the interdependencies between groundwater and surface water; Additional transfers are likely to be required in future, possibly even within the period under consideration, to serve the greater Cape Town area in the Berg water management area. Although water does not specifically need to be reserved for this purpose at this stage, it would be prudent not to forfeit this option unintentionally by the development of less beneficial projects. Care must therefore be taken that the construction of any large new infrastructure does not prejudice future water transfer options to the Berg water management area. No further deforestation should be allowed without the impacts on the ecological component of the Reserve, groundwater recharge and the sensitive salinity balance having been determined and found acceptable (Sherwill *et al.* 2007: 505; Underwood 1995: 232).

The quality of water is very important and DWA (2010) define water quality in terms of the water components and their ratios. For example, it is important to take note of factors such as chemical, physical and biological characteristics. General water quality can vary between areas. It is essential to manage water quality as it is very important to maintain an excellent quality of water for human usage. The *Working for Water* programme is an important management system. It is one of South Africa's most successful programmes. *Working for Water* (WfW) was developed in 1995 and aims to reduce the alien invasive plants taking over water systems, as well as reduce unemployment (Müller 2007b: 49). The programme is implemented throughout South Africa and has a high success rate. By reducing unemployment, the main proactive solution is to create jobs, which is one of the main aims of the WfW programme. Turpie, Marais and Blignaut (2008: 788) state:

> the establishment of the government-funded Working for Water programme... clears mountain catchments and riparian zones of invasive alien plants to restore natural fire regimes, the productive potential of land, biodiversity, and hydrological functioning. The success of the programme is largely attributed to it being mainly funded as a poverty-relief initiative, although water users also contribute through their water fees. Nevertheless, as the hydrological benefits have become apparent, water utilities and municipalities have begun to contract WfW to restore catchments that affect their water supplies.

The WfW programme is a multi-departmental project run mainly by the DWA, the Department of Agriculture, and the DEA. Implementing agencies carry out the programme as well, these include provincial conservation, agriculture and environmental agencies and they implement more than 300 WfW projects throughout the country by means of emerging contractors (Müller 2007b: 50). Müller (2007b: 50) mentions that 14% of these emerging contractors are collectives, and 85% are run by individual entrepreneurs, all of whom have been trained by the Working for Water programme. The WfW programme is an important management strategy for South Africa that has been successful and employs of people who do not have jobs. Job creation is a difficult and serious socio-economic problem for the country.

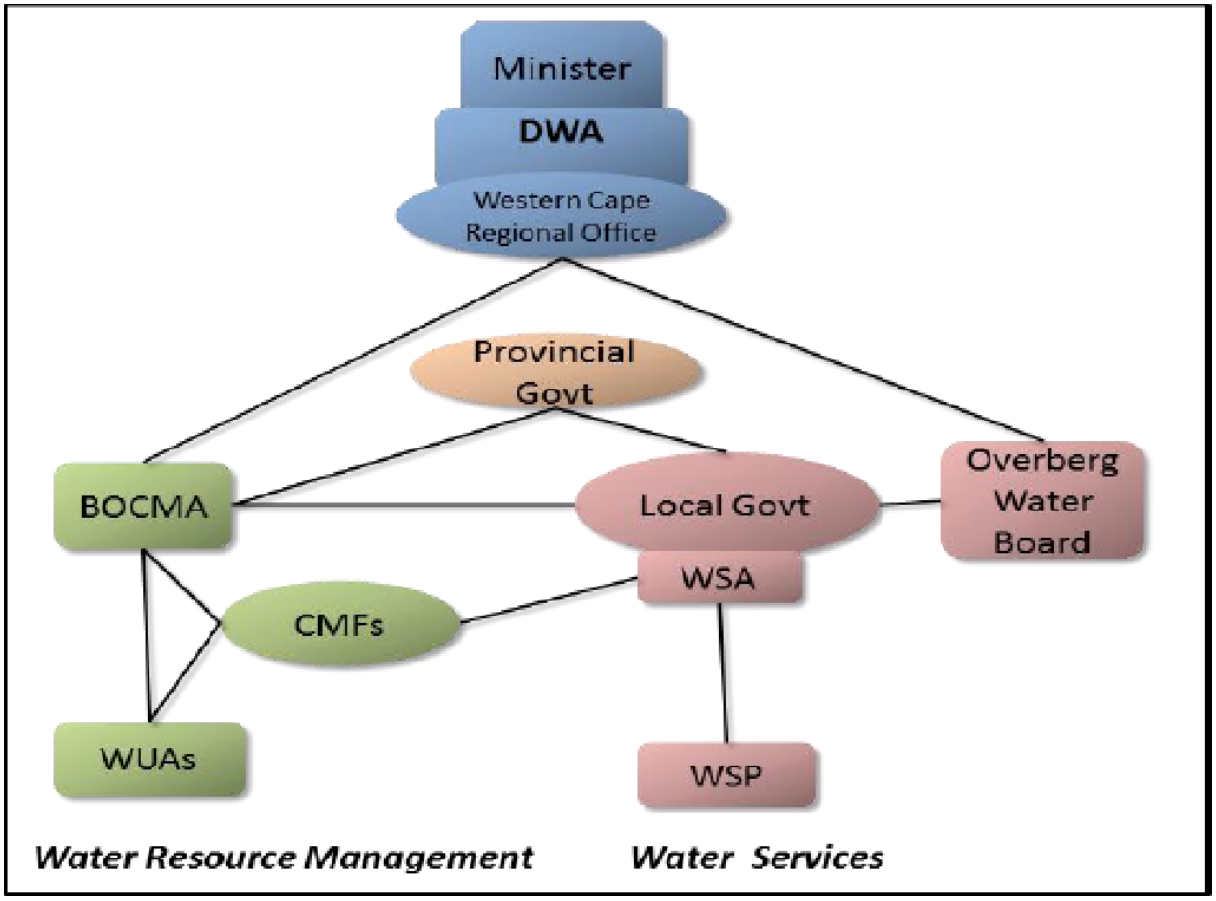


Figure 12: Organogram of the Breede-Overberg Catchment Management Agency (Breede-Overberg Catchment Management Agency 2011)

The following section examines integrated land management in South Africa, and incorporates a discussion of the general CFR along with the various management and conservation planning strategies. The case study used is related and linked in spatial aspects as well as ecosystem types to the Breede River and the Cape West Coast case studies.

4.4. Integrated Land Management in South Africa

Integrated lad management and the manipulation of access to land resources in South Africa have been key areas of political conflict (International Development Research Centre 2005). Although there is an urgent need to resolve the political disputes around land through its restitution and redistribution, the key issue for the future is the sustainability of the land as a resource base of South Africa, which includes the prevention of further degradation of land and soil quality. The history of land management has been characterised during the colonial and apartheid periods by the alienation of land from the majority of the South African people (Cantrill and Senecah 2001: 186). The management of land in South Africa is characterised by a system of strongly protected private ownership regulations, which include mineral rights and the concentration of large sections of land belonging to corporate owners. One of the greatest environmental problems facing South Africa is the deteriorating quality of the soil, which is a result of poor management practices as well as a lack of adequate monitoring and enforcement. These threats include erosion, compaction, acidification, and salinisation. Human activity has had a great impact on the nature of the soils. It was because of these problems that the South African government decided to implement the LandCare programme.

The Implementation Framework (1999) for the LandCare programme was launched in 1999. This document, consisting of three parts, covers the overall objectives in relation to the conservation of natural resources which the government would like to perceive covered in a LandCare South Africa movement. This movement is then built from community-based initiatives within the provincial structures and are to involve strong private sector and civil society participation. The second part of the document covers the individual components of the government's programme to promote land care from 1999 to 2002. These components were designed to lay the foundation for community involvement and wider participation in conservation. One of the components – awareness – was given specific responsibility for developing initiatives which would formally establish LandCare South Africa over the course of three years. Creating awareness through developing initiatives results in higher levels of participation from local communities. The third part of the document concerns the organisational structure within which these government programmes were then implemented, and it provides a basis for developing links with civil society representatives, universities and so forth, which in turn were expected to evolve into structures of LandCare South Africa (Clover and Eriksen 2009: 59).

The LandCare South Africa programme was set up to be a community-based programme supported by both the public and private sector through a series of partnerships. It is a process which focused on the conservation of natural resources through the sustainable utilisation and the creation of a conservation

ethic through education and awareness. Also, the programme sought to address rural poverty by means of sustainable job creation. The first step taken towards establishing LandCare South Africa by the government was initiating a land-care programme with five components: major resource conservation works; community and staff capacity building; awareness programme; policy and legislation; and research and monitoring (1999). A few of the LandCare South Africa objectives include: providing a framework for individuals, community organisation and the public and private sector, through partnerships to optimise productivity and sustainability of natural resources through management, protection and rehabilitation; to develop the capacity and skills of land users through education, knowledge sharing, information, participatory interaction for better access and management of resources; and to maintain and enhance the ecological integrity of natural systems (1999).

According to the LandCare South Africa programme (1999), successful land care is ultimately the responsibility of the agricultural users who need to organise themselves to conserve the natural resources as they depend on them. The government has a major responsibility to promote and assist in resource conservation and it does so in three ways: through public spending, which includes both capital spending and reorienting staff resources and programmes toward conservation objectives; through the design of incentive policies and the removal of disincentives; and through regulation and legislation. The following figure depicts the organisational chart of the structure of the LandCare South Africa programme (1999).

The main purpose of land use management is to promote and sustain a healthy living environment, create a safe environment, conservation for sustainable development and general welfare to name a few. These factors all contribute towards helping the natural management area to run more smoothly, to solve problems as they occur, and most importantly, to involve all stakeholders as local individuals often feel the need to be personally involved. The CFR is renowned as a biodiversity hotspot (Turpie *et al.* 2003: 233). Within the area of the CFR there are three main factors which threaten the land and biodiversity: exploitation of terrestrial and marine resources; invasive alien organisms, which form one of the greatest threats to the region's terrestrial biodiversity and land; and urban development and conversion to agriculture, which steadily erode the remaining areas of natural vegetation. Turpie *et al.* (2003: 246) mention that land transformation has become a major threat to terrestrial biodiversity of the CFR. Almost all of the original area of renosterveld vegetation within the area has been lost to cultivation due to its association with arable soils, resulting in its relatively high opportunity cost for conservation (Bennett *et al.* 2010: 342).

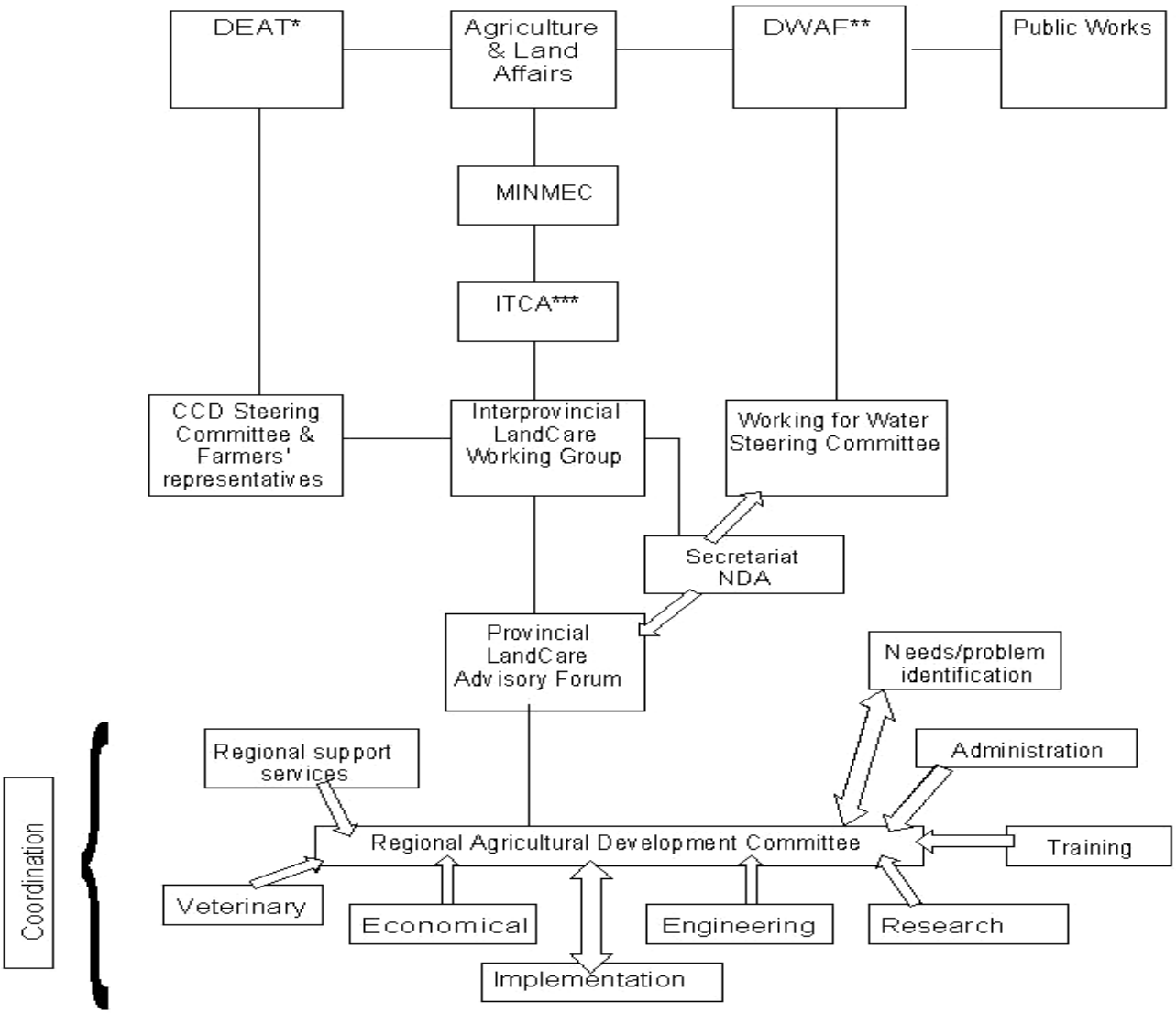


Figure 13: Structure of the LandCare Programme (1999)

The main threat facing the coastal resources of the CFR is exploitation. Fynbos has grown increasingly in demand in terms of export goods leading to the cultivation and harvesting of indigenous fynbos species (Turpie *et al.* 2003: 246; Billand 1993: 53; Galatowitsch and Richardson 2005: 515).

4.4.1. The Nuwejaars Wetlands Special Management System

Dennis Moss Partnership (2005: 8) describes the Nuwejaars Wetlands Special Management Area (NWSMA) as being situated in the Agulhas Coastal Plains in the Bredasdorp-Agulhas-Struisbaai area within the Western Cape. The NWSMA falls within the Breede Water Management area and extends across the boundary between the local municipalities of Overstrand and Cape Agulhas as well as within the Overberg District Municipality. The region can be described as unique with regard to the wide variety of wetlands which occur in the area. These wetlands include freshwater spring, rivers, estuaries, lakes, vleis and endorphin pans.

A SMA is formally recognised as an area where environmental sustainability is practised and promoted (Nuwejaars 2010). The NWSMA is a conservation concept which is an ongoing process of development at the southernmost tip of Africa, and it works towards conserving and restoring the wetlands and critically endangered fynbos of the Agulhas Plain. The project seeks to include local communities as well as create opportunities in the area. The NWSMA's action include restoring threatened wetlands and rare fynbos; clearing invasive alien vegetation; proactive fire management; promoting the wellbeing of all living in the area; ensuring sustainable agricultural production; and addressing climate change and carbon sequestration (Nuwejaars 2010). The NWSMA has the support of the DEA, the Department of Agriculture, SANParks, the UNDP, LandCare and local and national governments within South Africa.

The National Environment; Protected Areas Act (RSA 2003) stipulates that SANParks is required to develop a management plan for each of its parks (ANP Management Plan 2006). The Agulhas National Park (ANP) falls into the category of the NWSMA, even though SANParks is not a large factor for the NWSMA. The ANP falls under SANParks and as part of the CFR. Out of the three conservation areas discussed in this chapter the NWSMA and ANP are the latest conservation/protected area, as they were proclaimed in 1998. According to Dallas *et al.* (2006: 1), wetlands are ecosystems which are intrinsically valuable as they provide many essential and important services to society, as well as to the environment. Wetlands have a history of neglect, and knowledge of their functions, structures and distribution has been vague and scarce.

These critical factors, which have been neglected in the past, have over the past few years come to the attention of the land owners in the NWSMA. The Nuwejaars Wetlands Land Owners Association (LOA) consists of 23 land owners living in the area who own private land which borders on ANP and committed it towards the creation of a more sustainable environment. The planning to create the SMA began in 2003 among seven private land owners. The LOA participants agreed to sign restrictions on their title deeds in order to reach their aims of entrenching biodiversity conservation as well as sustainable farming. With the combined help of various conservation groups, government, local municipalities and SANParks, these land owners have reached a positive progressive level in obtaining protected environmental status. According to the NWSMA (2010), the LOA have divided their land into three types of land, namely core conservation land, buffer land and the transition area. The buffer land is interface between agricultural land and land for conservation, with the main focus being on protecting the core area. The transition area consists of farming activities.

Attempting to manage the environment as a whole is a highly complex task, as in terms of conservation management the environment consists of a vast variety of sectors. According to Pentreath (2000: 3), the environment needs constant collaboration, partnership, education and influence from all parties involved in conservation management. No environmental managers can hope to accomplish environmental change by themselves. It is therefore important to share similar and common objectives with fellow regulators with the view to accomplishing an

environmental outcome which is also accepted by those who are in turn regulated (Pentreath 2000: 11).

The following figure shows the planning area in the regional context of the Nuwejaars Wetland SMA (Nuwejaars 2010). Figure 15 depicts the planning areas in the context of statutory conservation areas for the NWSMA and surrounding areas. Figure 16 graphically illustrates the proposed development and management programmes of the NWSMA Initiative in the context of statutory conservation areas. These proposed programmes include the Nuwejaars Wetlands ecosystems, the Cape Agulhas municipal area, the Agulhas National Park, natural heritage sites, private nature reserve areas and provincial nature reserve areas.

Figure 14: The Planning Area in Regional Context (Nuwejaars Wetlands SMA 2010)

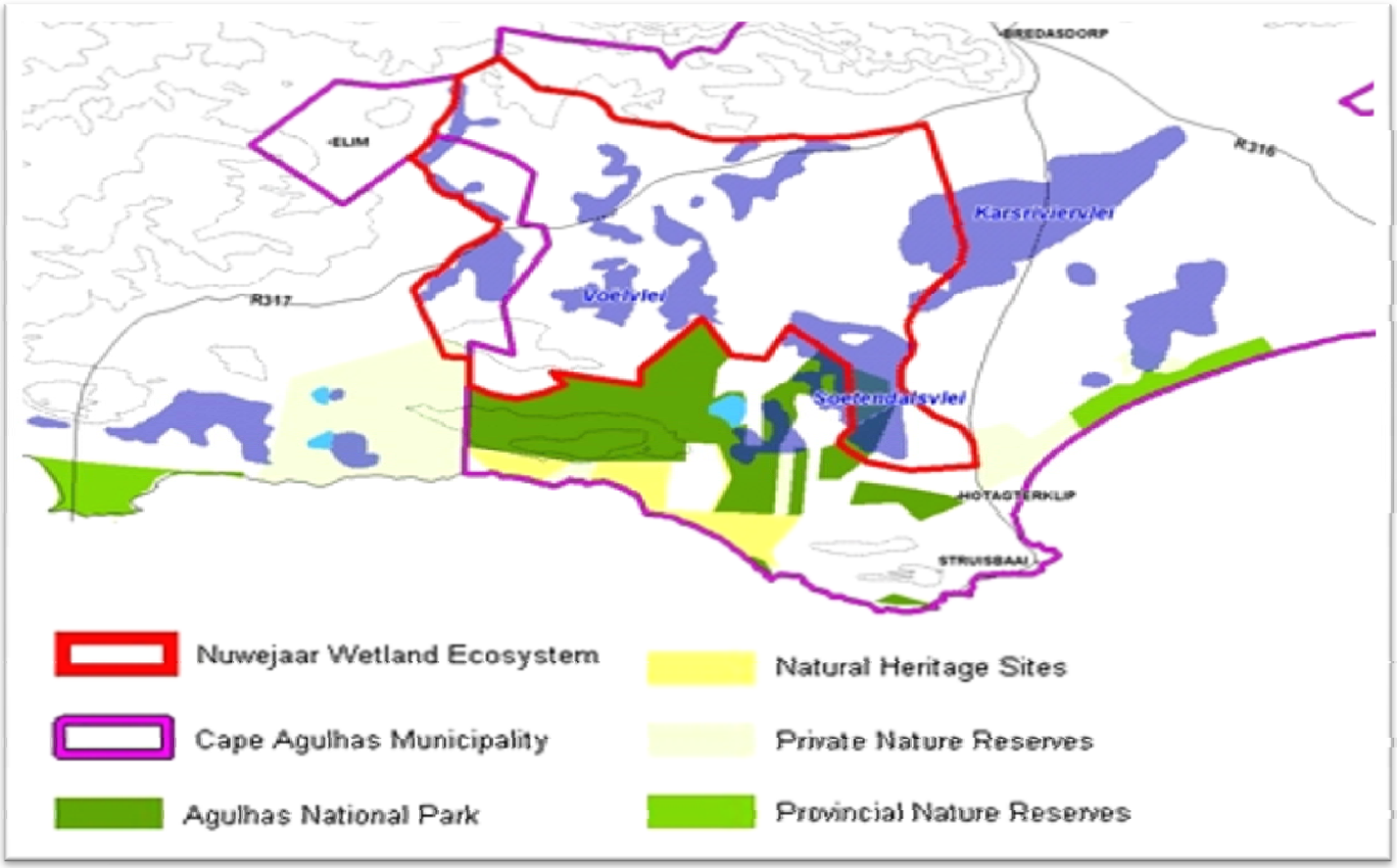


Figure 15: The Planning Area in Context of Statutory Conservation Areas (Nuwejaars Wetlands SMA 2010)

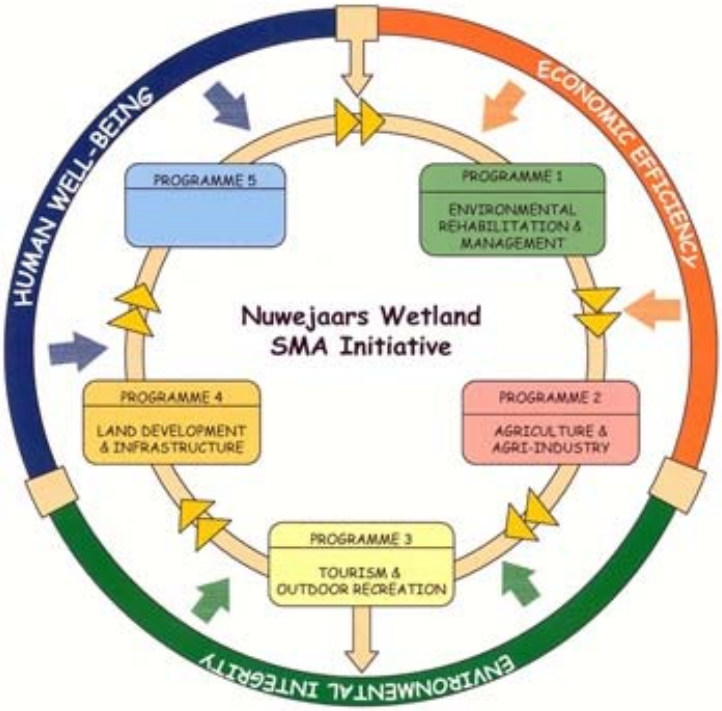


Figure 16: The Proposed Development and Management Programmes of the Nuwejaars SMA Initiative (Nuwejaars Wetlands SMA 2010)

The various types of vegetation identified within the NWSMA are forest, thicket, and renosterveld, various types of fynbos, acid sand, and restioid associations. Thirty-six different vegetation types have been identified and mapped in detail within the area of the Agulhas Plain. The water components found in the rivers tend to be generally alkaline and brackish as a result of the water passing through limestone-bearing Strandveld sands. Dennis Moss Partnership (2005: 12) states "from an environmental perspective, the primary reason for the establishment for the SMA in the Agulhas Plain is that this area constitutes one of the largest lowland fynbos and Renosterveld habitats in the world. The diversity of habitat types, wetland ecosystems, red data plant species and local endemics is unmatched in the Cape Floral Kingdom. The CAPE describes the entire ecosystem as 'highly irreplaceable'". Rouget *et al.* (2003b: 63) mention that the main threat to biodiversity has been the loss of habitat via land use practices.

Farming practices are an important aspect within the NWSMA as the land owners association consists of farmers, and as farming practices are constantly evolving so the technology is continuously improving. Environmental problems, according to Matlon and Spencer (1984: 671) contribute to farming practices occasionally presenting constraints to agriculture, which in turn affects the environmental conservation areas set aside on these farms within this area. The NWSMA is essentially based on the perception that ecological functions of the natural systems are directly related to biodiversity and that biodiversity is the primary element in the maintenance of the resilience of ecological systems (Dennis Moss Partnership 2005: 16). Day (2009: 844) mentions that although rivers and wetlands are similar, they differ in some important features and tend to be managed in different ways by different agencies.

It is important that essential areas of ecosystems, broad habitat units and individual habitats are not fragmented by inappropriate administrative boundaries as far as possible, with special emphasis on those areas which are highly irreplaceable. The primary objective of the SMA is to operate and function as an integrated land management area that radiates out from core conservation areas, being the wetlands, as these areas are all connected by ecological corridors. The SMA, like other ecological and environmental conservation areas, is divided into three primary areas – the core area, the buffer area, and the transition area. The core area is designated for biodiversity conservation and associated land uses. The buffer area provides an interface between the core and transition area with the main foal being to protect the core area. The transition area supports the agricultural enterprises and associated human settlements and activities which go along with them (Dennis Moss Partnership 2005: 20).

The core directives of the NWSMA, according to Dennis Moss Partnership (2005: 25), are as follows: long-term ownership of the land must be ensured; current levels of net income must be meaningfully improved; and value must be added to the SMA as a self-sustaining system, both from an environmental perspective and from an economic perspective. Key aspects of environmental degradation are important factors to address for a sustainable future. Environmental sustainability within the NWSMA requires effective integrated environmental management, which in turn requires knowledge, creativity, imagination and innovation (Dennis Moss

Partnership 2005: 25). During the State of the Nation Address in 2004, the President pointed out that the SMA would strive to give effect to the national agenda with specific reference to the following:

- The promotion of a single vision of a people-centred society and the eradication of poverty and inequality;
- The implementation of legitimate programmes that serve this vision;
- Addressing the key questions of where resources are to be found to fund developmental programmes;
- Recognising that development programmes cannot be carried out by government alone – this is a national task that calls for effective partnership;
- Recognising that development programmes must achieve visible benefits regarding the improvement of the quality of life for all people;
- Recognising that development programmes should promote urban renewal and rural development, support for micro-credit and small enterprises, education and modern skills training, and development of social and economic infrastructure; and
- Addressing the challenges of both the First Economy (formal) and Second Economy (informal) and transforming the second economy through building and growing a strong first economy (Dennis Moss Partnership 2005: 26).

These factors provide a clear set of goals and objectives in order to plan and evaluate performance by various stakeholders involved. The vision of the NWSMA, as stated by Dennis Moss Partnership (2005: 29) is to "create a sustainable ecology, which ensures the protection of the Nuwejaars Wetlands Ecosystem, enhances the heritage and culture of the sub-region, generates benefit for all stakeholders, helps meet social and environmental requirements, and encourages community lifestyles compatible with environmental sustainability". This vision seeks to create the best possible system of environmental sustainability possible while promoting stakeholder co-operation and a better living environment for the broader public who are affected by the area. In order to do this the management strategies have to be correctly instilled within the stakeholders and policies involved. This will be discussed in the next section.

4.4.2. Management of Nuwejaars Wetlands Special Management Area

In order to be able to devise a management strategy in the first place, research has to be done in order to ascertain what is needed, which aspects need more attention, and how stakeholders can be involved in all possible ways. According to Dennis Moss Partnership (2005: 51), the main purpose of establishing a management and organisational structure for the SMA, an overarching governing entity needs to be established, as well as a management entity usually in the form of an assignation for each of the programmes which will be implemented and managed. Dennis Moss Partnership (2005: 54) mentions a few management guidelines and indicates that the core conservation area is the only area which will be managed in terms of the corporate agreement and partnership approach. One important guideline which is heavily emphasised is the need for continual improvement within the management strategy. This can be achieved by evaluating environmental performance against the environmental policy at all times, as well as identifying opportunities for improvement. Dennis Moss Partnership (2005: 58)

suggests that there are five main long-term management programmes relate to topics such as the environment, tourism, biodiversity products, human resources, land development, and agriculture and agri-industry. These five long-term programmes include restoring wetlands and other often-threatened habitat through rehabilitation and alien-clearing; promoting the well-being of all who live within the broader area; promote diverse uses of the wetlands, natural habitats and intensive agricultural activities; promote sustainability in all forms of agriculture; and encourage tourists to visit the Agulhas Plain's unique sites.

Apart from the management strategies the SMA seeks to implement itself, the CAPE plays a vital and significantly large role in management-related programmes. Other management strategies involve the Environmental Management System (EMS). The management of the SMA involves the EMS including a comprehensive environmental management plan for each programme. Dennis Moss Partnership (2005: 57-58) states that it is of fundamental importance to implement procedures for regulating operational performance, as well as for ensuring that objectives are being reached in a productive way. This would be achieved in the SMA through

- Monitoring and measuring all impacts of development and management actions on the environment;
- Establishing and implementing procedures for handling incidents of non-conformance with the EMS;
- Managing environmental records, including, amongst others, the result of audits and reviews and the evaluation of educational programmes;
- Undertaking periodic environmental audits in accordance with a formal auditing procedure (Dennis Moss Partnership 2005: 57-8).

The EMS needs to be reviewed at regular intervals in order to promote continuing effectiveness and appropriateness. Apart from these management strategies, another important programme is that of educational centres at environmental conservation sites. The public are encouraged to become members in order to be able to do something about their natural environmental surroundings. Educational groups consist of scholars and tourists mainly. The main key elements of a comprehensive land management system comprise of spatial development frameworks, land use schemes, rates databases, and information regarding the provision of infrastructural services, environmental management systems, among others.

4.5. Summary

The main aim of this chapter was to discuss the three co-management environmental areas chosen as well as the management strategies they have implemented. One interesting factor is that many of the management strategies are very similar. Similarities include stakeholder involvement, policy settings, integrated environmental management systems and problems that environmental conservation areas are experiencing in terms of human and natural causes. The following chapter aims to re-assess the management strategies already in place in discover if and how they have changed, and if so, then to find out why. Conservation is an important part of the South African environment as a whole and it would be wise to conserve and manage the areas already in place as

biodiversity, water systems and land systems to support the country's economy, job creation and the eradication of alien invasive species. Sustainable environmental areas are the key to success for South Africa. Their effective management is another matter entirely

CHAPTER 5: RESEARCH FINDINGS

5.1. Introduction

The intrinsic structure of conservation management is both complex and dynamic in its nature regarding people and management in the context of the environment. Decision-making is a complex process which requires many hours of discussion within the governances structures as well as with privately involved stakeholders in order to choose the best option for the conservation area as well as for the people working there. Although many citizens within the sphere of South African environmental conservation would like to make a significant contribution to policies and decision-making regarding their environment, many people simply do not have the resources or the time to do so. After 1994 many people fell into the category of previously disadvantaged groups. These included the poor, disadvantaged, rural communities, which included women, youths, indigenous people and subsistence farmers. These groups of the population fell into the so-called minority groups and were regarded as unimportant to the decision-making and policy formulation that government undertook on their behalf. Today the government encourages communities to participate in managing their surroundings and the activities happening there.

5.2. Research Overview

Discussion with the respondents revealed that they felt that many, if not most, politicians and bureaucrats in the public decision-making and management sphere of government showed little interest in improving or even considering the process of decision-making. It should be noted that there is some mismatch between the legal frameworks and the practice at ground level. Firstly, some conservation officials at grassroots level lack an understanding of the participatory processes. Secondly, active community participation is often misconceived by the street-level bureaucrats of conservation. These bureaucrats regard participation as simply attending meetings on conservation by local communities. Other factors are conservation officials misunderstanding their jobs; mistreatment of local communities by conservation officials in terms of respect; lack of sharing benefits between stakeholders; and local communities tend to be uninformed and unaware of administrative and bureaucratic procedures (Holmes-Watts and Watts 2008: 441). An important aspect to address within the South African context of collaborative resource management and public involvement is the aspect of public-private partnerships (PPPs). According to Seemela (2008: 484), municipalities in South Africa are facing serious challenges as they are expected to provide service delivery single-handedly to the public as well as to facilitate development. The municipalities are seen to play an important and central role in the socio-economic and environmental conservation of its citizens. Seemela (2008: 483) mentions that “the private sector should not be regarded as the only solution to all the problems facing service delivery by municipalities. In contrast, municipalities should not be seen as a service provider of all services, but rather as a service facilitator in that the socio-economic development and environmental management could be proliferated through the implementation of public-private partnerships.”

Stakeholder involvement within conservation areas has become increasingly significant and imperative. According to Raustiala (1997: 719), stakeholders, especially NGOs, have formally – yet not completely – been incorporated into what was previously known as state-only activities. New participatory roles have been created for NGOs as governmental departments have begun to realise that they cannot necessarily fulfil all the promises they make. Participation is a complex system of structures and processes. Stakeholder involvement is further beneficial to governmental and public enterprises as stakeholders reduce the amount of dependence on areas such as environmental conservation. As environmental conservation management is a complex and a many-faceted subject, public entities accept any and all help and support offered. Stakeholder involvement is also tied to social interaction as it enables different community groups and individuals to enter into negotiations, discussions and decision-making concerning the conservation areas they live close to.

The NWSMA rationalises that environmental sustainability needs to be effectively integrated into environmental management. This, in turn, requires creativity, innovation, knowledge and imagination. Conventional thinking with regards to land use planning and management leads to the requirements being challenged in such a way that public-private partnerships have to be created in order to be able to address the challenges of the future. Public participation has often been understood as being focused on the improvement of community involvement in the sphere of local decision-making, as well as in the sphere of implementation of development programmes. It is imperative that government introduces programmes that give practical expression to the Constitutional principle of public participation (DPLG 2007: 19). In 2003, the land owners in the Nuwejaars area came to a collective decision to implement a special management area in their collective properties in order to create a unique integrated land use management system. This system is based upon the principles of holistic and integrated planning and management, along with public-private-community partnerships. These owners form the core of the Nuwejaars Wetlands ecosystem (Germishuis 2007: 9).The history of land surrounding the Agulhas National park area mainly revolved around agriculture and resource utilisation. Because of this focus various changes to wetlands needed to be addressed though management intervention. The protected areas management planning framework guides park management to set up a management plan as well as to implement and review the plan periodically.

The BOCMA and the NWSMA are linked directly through legislation in the form of the National Water Act (Section 3) (RSA 1998b). The NWSMA states that the Department of Water Affairs must devolve most of the catchment management issues to CMAs, which include representatives of local interest groups and relevant governmental agencies. For rivers in the Agulhas National Park, this refers to the Breede River. Section 3 (RSA 1998b) in the National Water Act clearly stipulates that national government has the power to regulate the use, flow and control of all water in South Africa. National government is the public trustee for the nation's water resources and it acts through the Minister of Water Affairs. By South African standards, the Breede River covers a substantial amount of space with a unique estuary. During an interview with an individual from the BOCMA, the solution given to the question regarding core problem in conservation and management was setting up PPPs. By offering PPPs, an environmentally protected area can incorporate all spheres available to the area. Management would be strongly advised to look into PPPs (if not already implemented), as all

resources and capacity available to the conservation area should be utilised in the most optimum way possible so as to benefit the area to its maximum potential.

As a result of the expanding growth in the Western Cape, developmental areas are taking over open spaces. As population numbers increase, so does the need for agricultural land uses. Civil society on the west coast took these developmental patterns into consideration and collaborated with the provincial and local governments in question to form the CWCBR as a NGO run by volunteers. The DEA (2006: 133) states that

> Civil society plays an important constructive watchdog role in the conservation of biodiversity in South Africa, and an increasingly strong sense of custodianship of the environment and its dynamic synergy with its social context informs the agenda of many organisations outside government, including NGOs, conservancies, and Community Based Organisations. Examples include the Wildlife and Environmental Society of Southern Africa, the Endangered Wildlife Trust, Birdlife South Africa, the Botanical Society of South Africa, Environmental Justice Network, Resource South Africa, the Wilderness Foundation, WWF-SA, Conservation International, and Group Work.

According to the DEA (2006: 65), community interaction has been significant in sectors such as public participation in policy development, but has been sorely lacking in decision-making and implementation. Since 1994 South Africa has encouraged communities to take action and become involved in the processes of decision-making and implementation, and to become involved, active role-players in their own futures. In Chapter One, various research aims and purposes as well as research methodologies were set out in order to conduct the planned research for this thesis. This chapter will assess the outcomes of these research objectives and indicate how the findings relate back to the theoretical frameworks proposed by Müller (2007a) and Conley and Moote (2003) in Chapter Two. The research findings will be discussed and evaluated in order to discover how the research objectives were reached with specific attention to the process which was followed.

5.3. Research Methodology

In the formulation of the research methodology in Chapter One the following aims, purposes and designs were outlined. They were selected to meet specific research objectives and included database searches, evaluation methods, as well as questionnaires. The three methodologies chosen were Evaluation Research Implementation (process) Evaluation; and Conceptual Analysis.

According to Mouton (2001: 158), the design methodology of the implementation (process) evaluation can be described as research which aims to discover whether intervention has been correctly implemented and entirely covered as designed either in an a-theoretical aspect or a so-called theory-driven evaluation. As mentioned in Chapter One, this design was specifically chosen because the proposed research questions (see Appendix I) required an extensive study of the programmes and policies involved, as well as of how they are implemented. This

design is for an empirical study, while the last design – conceptual analysis - is non-empirical in nature. Conceptual analysis design entails the analysis of words and concepts and the meaning behind them by means of clarifying and describing the various dimensions and contexts of significance. This design of the research methodology is empirical, as the theoretical and in the form of literature study need to be linked together as well as relate to the practical aspect of the research, which is in the form of interviews.

The questionnaire (see Appendix I) was formulated according to the frameworks of Müller (2007a: 26) and Conley and Moote (2003: 376) which were described and discussed in Chapter Two. The questionnaire was submitted onto a survey internet site – surveymonkey.com. in order to make the questionnaire easily accessible to the participants unable to participate in the interpersonal interviews. These frameworks provided the guidelines to formulate questions that were relevant and specific to the research. Müller's framework consists of fifteen concepts, namely scope, position, boundary, authority, information and knowledge management, decision, pluriformity, interdependence, formality, instruments, leadership, institutional readiness, redundancy, incoherence and lacunae. Conley and Moote's framework consists of three factors, namely process criteria, environmental outcome criteria and socioeconomic outcome criteria.

Once the questionnaire was compiled, the various relevant people involved in the three areas were contacted by means of e-mail, telephone conversations and one-on-one interviews. For people who wanted to remain anonymous, an internet survey was created and the links e-mailed to various people who wished to participate. Out of the 23 interviews, 7 were conducted face-to-face, while 16 of the respondents responded via the internet survey. They then filled out the questionnaire online, thus remaining anonymous. There were a total of 7 people per area interviewed and who filled out the internet survey. The people interviewed vary in terms of job description as different opinions from all tiers are necessary in order to evaluate the managerial systems and settings in the various collaborative natural resource management areas. Some opinions were more positive than others. The various interviews were conducted in Bloubergstrand and Maitland for the Cape West Coast Biosphere Reserve; in Worcester for the Breede-Overberg Catchment Management Agency; and in Bredasdorp for the Nuwejaars Wetlands Special Management Area. Once all the interviews were conducted, the data had to be compiled in an orderly fashion. This was done in the form of an Excel spreadsheet (see Appendix II). Once the data were inserted into the tables, graphs were made of the statistics. The next section discusses the research findings as whole as well as the separate components for the three conservation areas.

5.4. Research Findings

The first comparison that needs to be made between the three conservation areas is that – apart from differing in the type of conservation area that each one is - they each have different types of structures. The CWCBR is a biosphere in nature, but it is a public entity run solely by a board of volunteers, who are also members of the conservation area, as well as by the conservationists who run the various

projects for the area. The BOCMA is a water management system as well as a CMA, which is also incidentally only one of two CMAs in South Africa. The BOCMA is positioned directly under the Minister of Water Affairs and is directly accountable to the Minister, thus making it a public governmental organisation. The CMA is mainly run by the board of directors, who are directly accountable to the Minister. The BOCMA is still in the early stages of development, so the organisation is still relatively small, but as it expands so will the size of projects taken on. The NWSMA is a land management area which is completely private, and consists of a land owners association of 23 members. These land owners, who live and farm in the Overberg region, have taken sections of their private land and committed it to various methods of nature conservation which include farming sustainability. The title deeds of the land owners have restrictions on them, so that if the title deeds are passed on to someone else, the conservation areas set aside on the land are not jeopardised in any way. The NWSMA has also created a section 21 not-for-profit company by the name of Nuwejaars River Nature Reserve (NRNR) through which they pump all their profits back into conservation operations. The main objectives for each conservation area are specified in terms of mission statements and goals. These will be discussed in the sections below. The next section discusses the questionnaire (see Appendix I) as well as the answers given by the different participants from each of the corresponding areas.

5.5. Conservation Area(s) Related Questions and Responses

5.5.1. Hierarchy (Q2)

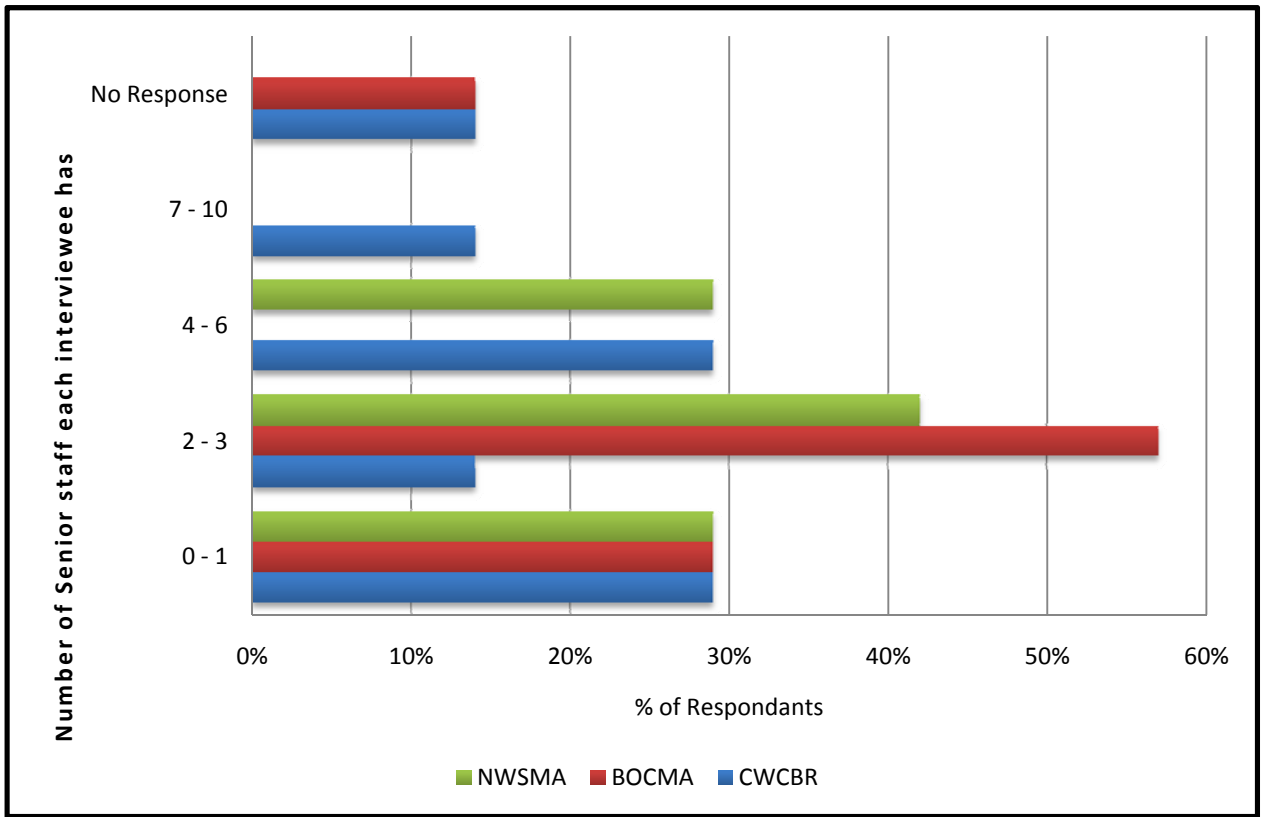


Figure 17: Number of senior staff and/or subordinates

According to Olmstead (2000: 187), subordinate leaders are achievers and decision makers on senior levels. The relationship between the executive and each subordinate is constantly growing and shifting. The executive is accountable for achieving results and looks to the subordinate for performance and, when nearing the end of a project, relies on the subordinate to take certain actions. Every organisation, no matter what its size, needs a hierarchy of management in order to function on an optimum level of output (Slocum and Cron 1987: 124). The three conservation areas described here show clear evidence of the importance of a hierarchy when it comes to decision-making (which will be discussed at a later stage). As the results of the survey conducted both via the interviews and internet survey reflected an equal number (7) of participants for each area, the results can still not be generalised as all parties involved in every aspect would need to be interviewed. All the participants in a conservation area would need to be interviewed in order to obtain more precise results, instead of only a select few out of each conservation area.

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Several conclusions emerge from the results. Out of the seven participants interviewed for the CWCBR, 27% were senior staff members, 14% were conservationists and 7% were junior staff. This formation of the hierarchy displays an effective balance in the conservation management as well as an evenly distributed hierarchy. By this is meant that a more or less equal number of participants were interviewed within each sector of the area. This leads to the conclusion that the CWCBR has a hierarchy structure with many tiers.

For the BOCMA the results showed a flatter structure, a less distributed hierarchy, but a more equally spaced tier structure. More specifically, because the BOCMA organisation is still in the early stages of development, it clearly has a two-tier structure. The top tier of staff consists of the board of directors and the executive of the BOCMA while the second tier consists of water-management specialists and conservationists. As the organisation grows, so will the hierarchy and number of tiers.

The NWSMA is a small, relatively unknown area. The conservation SMA has therefore not grown much in the past few years. The land owners association (LOA) acts mainly as a board of directors, who discuss all topics on an equal basis. Yet various tiers do exist within the SMA. The NWSMA works together with the LOA to manage the conservation area. 42% of participants have 2-3 subordinates, while 29% have 0-1. The remaining 29% of participants interviewed responded that they feature on the third tier of the conservation SMA, having 4-6 subordinates. Organisations function in a successful way when there is a clearly formulated chain of command to follow. This is demonstrated by each of the three conservation areas as they have clearly-defined structures in place and the tiers within each are well formulated and regulated effectively by the members within the conservation areas.

5.5.2. Aims and Objectives (Q3)

Wittig (1992: 129) defines goals and specific objectives as an essential frame of reference for meaningful internal and external evaluation. The purpose of aims, goals and objectives is to seek out the best course of action to follow when attempting to improve a situation. Aims and objectives in conservation areas are set up as markers for the conservation area to strive towards. They are also there to keep the conservation area's progress on the correct path regarding what they would like to achieve, whether it is by government regulation, the protection of endangered plant/animal life, or just to conserve the area in an environmentally stable way as far as they possibly can.

The aims and objectives for each of the three areas are highly specific in nature and strive to achieve what is in the best interests of the environment as well as the surrounding areas. The CWCBR's aims and objectives centre mainly on general conservation and land management. As the area is a biosphere reserve, the focus is on the protection of plant and animal life, but also on planning and development. This latter factor incorporates the landowners, because Cape Town is rapidly developing and space for conservation is becoming threatened as the population increases. Yet the CWCBR has specific zones allocated to it which are specifically set aside for conservation protection by law. There is a constant struggle to balance the need for conservation while promoting development and meeting human needs.

Being a water-focused management area, the BOCMA exists to manage the given water resources in an effective and responsible way. In order to do so, constant evaluation is necessary. The BOCMA focuses mainly on the conservation of the natural water resources, but also on the conservation of the natural habitat and aquatic species. According to the CMS, ensuring the quality of water is an essential focus of the area as well. The mission of the CMS is that the Breede-Overberg CMA, apart from striving for responsible management, also seeks unceasing and unremitting co-operation with all stakeholders involved in order to decentralise decision making down to the lowest level so that all water users may have a say in, and benefit from, decisions made and actions taken within the CMA.

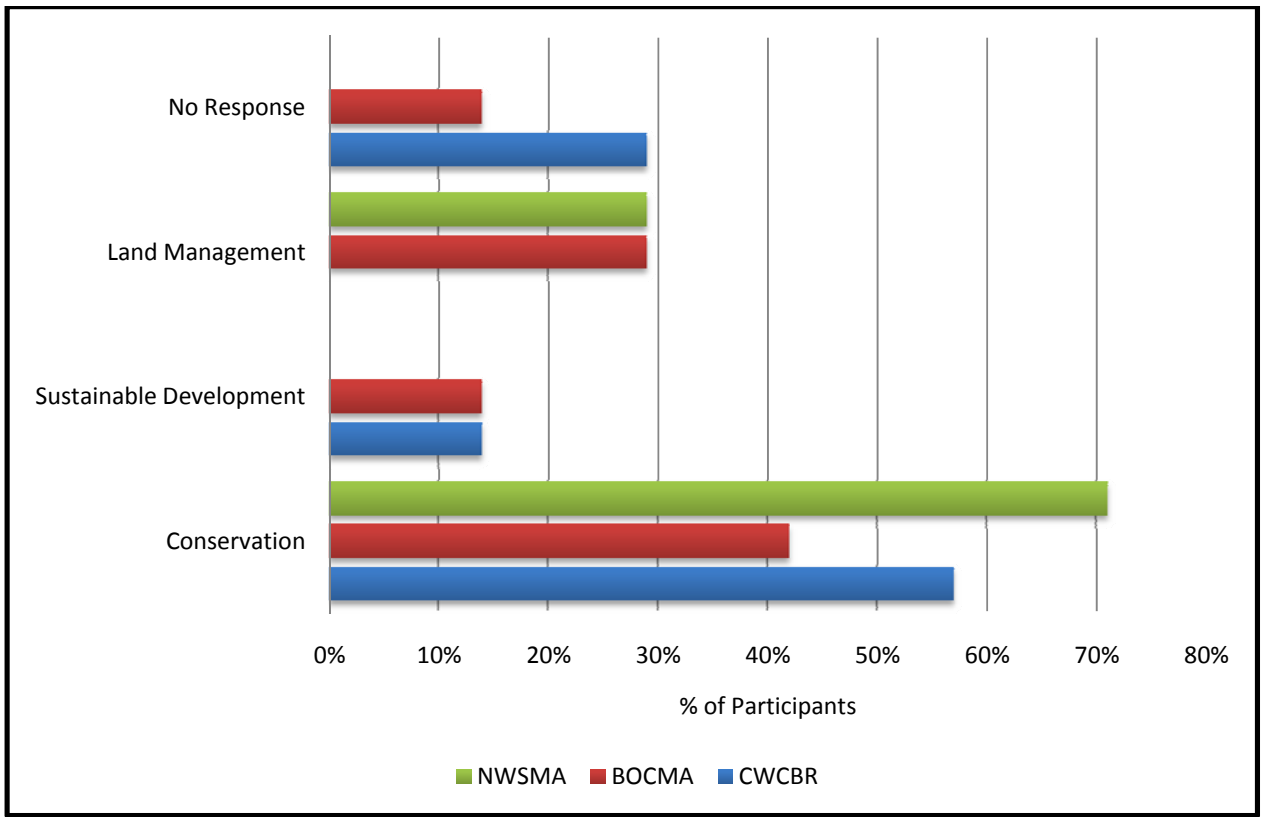

Figure 18: Aims and Objectives of the Conservation Areas

The NWSMA is an area recognised for practising and promoting environmental sustainability. The main goal is to attend to conservation with a specific focus on land management, all the while striving to meet agricultural objectives and goals. According to the NWSMA website (2010), there are five main aims and objectives: ensuring sustainable agricultural production; restoring threatened wetlands and rare fynbos in the form of wetlands rehabilitation; clearing invasive aliens; addressing climate change and carbon sequestration; and promoting the wellbeing of all living in the area. One participant mentioned that objectives are only relevant on state ground in state organisations, but the NWSMA is a private organisation; it formulated an Agenda 21 which forms part of the aims and objectives. It is clear from all the information obtained on the aims and objectives that even though the three areas are intrinsically different in their approach to nature of conservation approaches, they have very similar aims and objectives.

5.5.3. Funding (Q19)

The social and political dynamics of funding are highly complex and sensitive in nature. Traditional funding for conservation areas has grown in terms of expectations and duties and declined in terms of service delivery. This has caused international parties and NGOs to step in and fill the gaps left by public enterprises being unable to carry out their promises. International funding plays a hugely significant role within the public entity that is the CWCBR. Provincial and local funding contributes to the biosphere, as do private organisations. Tisdell (2006: 515) mentions that the more aware the public and communities are to the level of endangerment and species' status, the more willing they would be to donate. The CWCBR has set a membership programme in place so that the local

community is encouraged to join in order that they can be involved and have a say about the area.

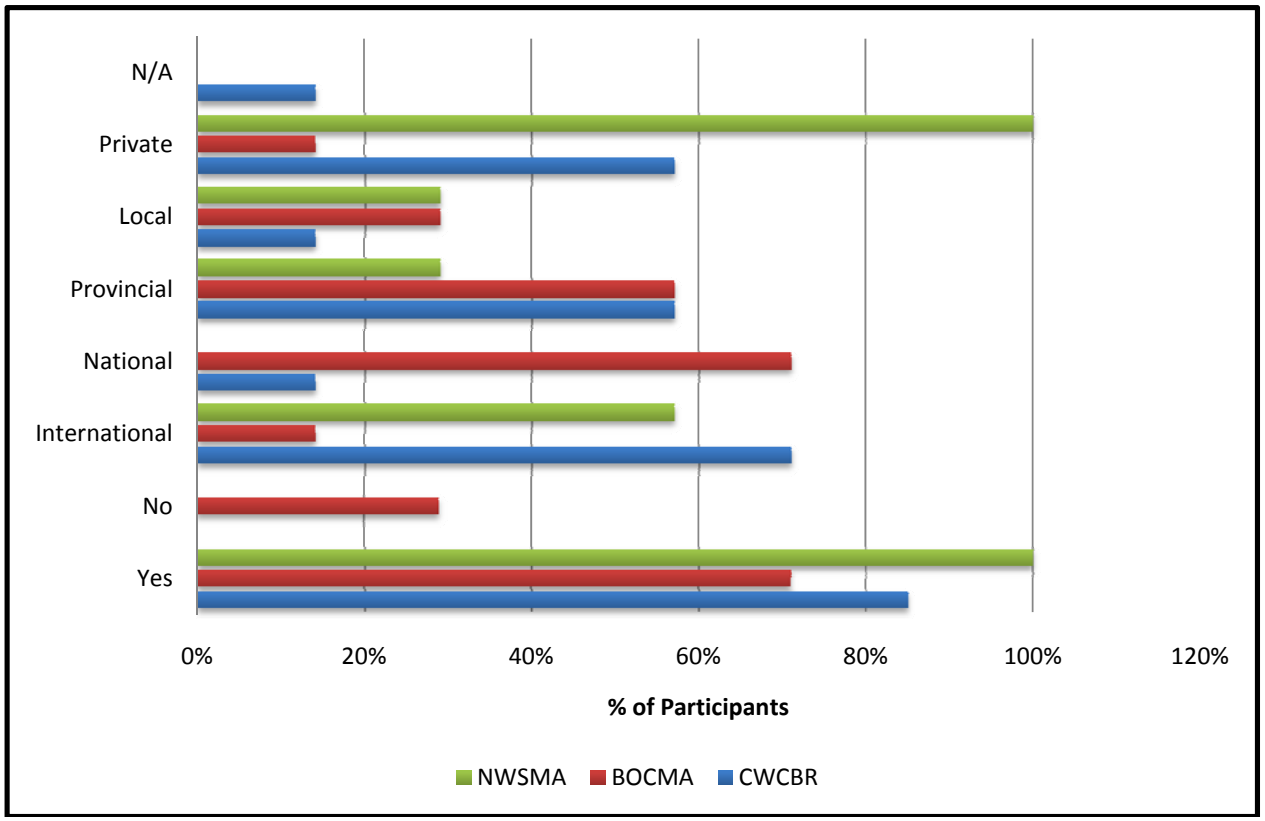

Figure 19: Conservation Areas Receiving Funding

The BOCMA falls under the responsibility of the Minister of Water Affairs and is therefore mainly financed by national and provincial funding. One participant mentioned that over the course of development of the CMA, the desired outcome is that the CMA should eventually be funded by taxes on water. Other participants indirectly involved in the Breede River mentioned that the municipality receives a minimal amount of funding from national government, and if they are lucky this will form part of the annual budget, but otherwise they are only given what is left. International funding does play a role in the CMA, but as the organisation is still developing, the international funding is still minimal as it is not really necessary in an area such as the BOCMA as it is still in the early stages of development and, so far, has received sufficient funding from the South African government. Yet it was found that the funding of the CMA was not correctly understood as funding is indeed coming from water resource management charges levied on all water use taken from the water resources – rivers and ground water. The funds are supplemented by DWA in the initial phases of CMA development as "seed" funding. Waste discharge charges will eventually also be charged for the water quality management functions and paid to the CMA for functions performed. International funding has been received from international funders through the Dutch Waterschappen that spent significant amounts on training of governing board members and officials of the 2 CMAs.

Private organisations are the main donors to the NWSMA. These mainly consist of members of the land owners association. The area receives minimal funding from

provincial and local government as it is a private conservation site. According to the surveys conducted and information received from interviews, funding from international organisations plays a significant role. Although international organisations only sponsor the area for a specific project which only run for a certain period of time, the NWSMA formulates projects which interest international organisations and nearly always guarantee funding for the area. Yet it can be concluded that the private organisation of the LOA and other private organisations nearly exclusively sponsor the area.

5.5.4. Conservation Contracts (Q32)

Each of the conservation areas involved has formulated specific formal plans. According to Cowling and Pressey (2003: 1), systematic conservation planning is crucial in the formulation of creating frameworks in order to then formulate aims and objectives for what needs to be maintained and protected in the area. The formal planning outlines the main concerns for each area creating focal points and highlighting where the problems lie. The purpose behind the question was to prove that each conservation area involved here has formal planning structures and processes as this is a necessary requirement.

5.5.5. Original Reason for Establishment (Q36)

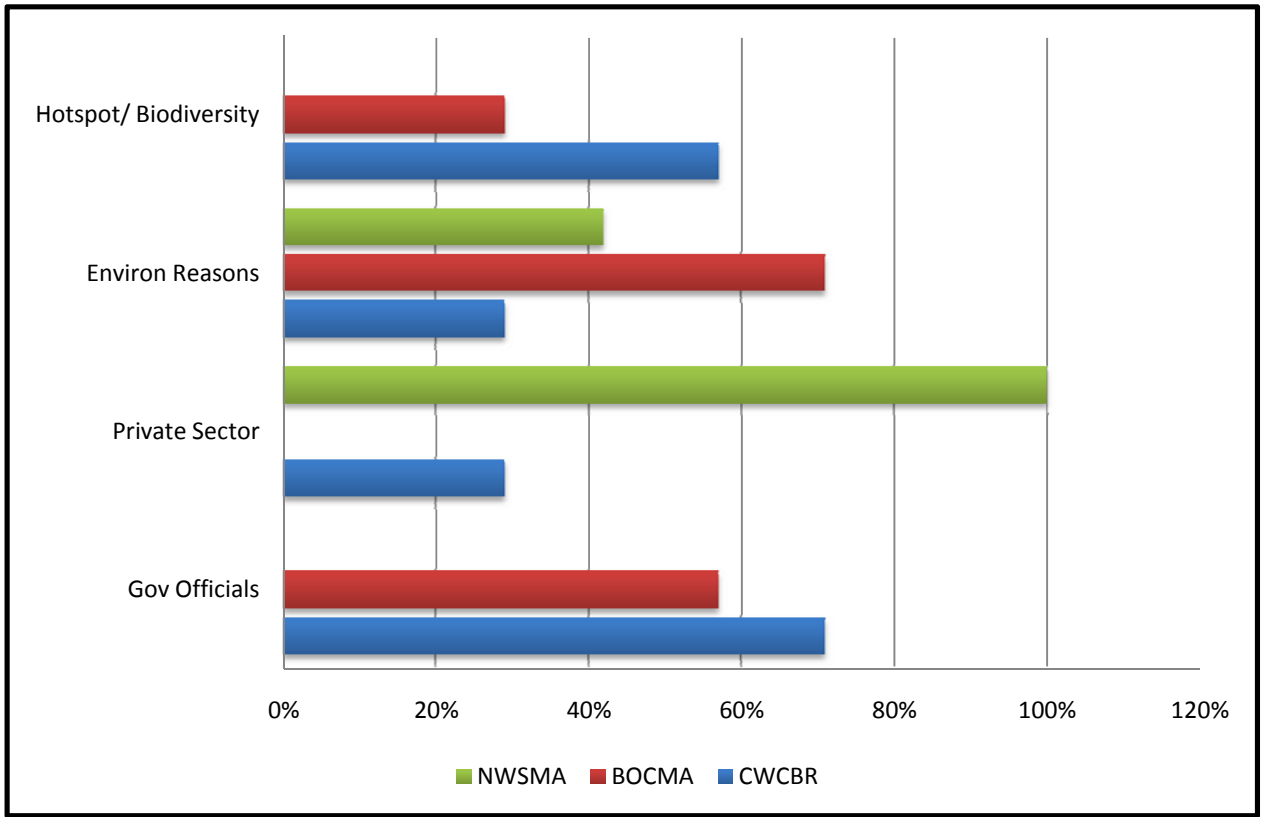

Figure 20: Original Reason for Establishment of Conservation Areas

The CWCBR falls under the area of the Cape Floristic Region (CFR). As mentioned in Chapter Four, Rouget *et al*. (2003: 129) note that the CFR is unlike other biodiversity areas in that it is inadequately protected or conserved. Also, the CFR is listed as one of the 23 terrestrial biodiversity hotspots (Balmford 2003: 435). Because of the impending danger the conservation areas – fauna and flora – was in, i.e. Red Data Species, various conservation areas were formed in order to protect endangered plant and animal life. Thus the main reason the CWCBR and CFR were created originally was to establish a hotspot or biodiversity endangerment area.

In South Africa water has been increasingly recognised as a scarce natural resource. Because of this the natural rivers in South Africa are being more carefully monitored, and public awareness of water scarcity has been increased. This problematic concern draw the attention of the Department of Water Affairs and actions were taken towards creating CMAs. Thus the main reason for the Breede River becoming a CMA is to manage development and water use on a local level while sustain environmental integrity of the water resources. It was found that the reason for establishment of the CMAs is not only due to water scarcity, but generally improved water resource management on a local level.

The NWSMA was established through the initiatives of the land owners in the area who own the land privately. The need to start conserving biodiversity because evident as the land owners became aware that it was under threat. They understood that biodiversity is a lifeline and the need to rehabilitate natural resources materialised in order to survive. Thus the land owners created the land owners association (LOA) and to address pressing environmental issues and they each selected set areas for protection on their land.

5.5.6. Management Programmes (Q39)

Being a public or governmental-based organisation where formal documentation and specific management programmes are standard requirements, the BOCMA definitely has specific programmes set in place with straightforward outlines on what needs to be accomplished.

The NWSMA, being a private entity, definitely has policies and management strategies in place and they adhere to governmental policies. Yet as for having specific management programmes for the area, they do not have any as government has no need to create policies for the area as it is privately run. The NWSMA, however, have their own management strategies in place, such as Agenda 21.

The CWCBR as a public NGO also abides by the conservation policies set up by government; nonetheless there are few policies specifically designed for the area as it is an NGO and not state-based. Thus each conservation area has specific

management programmes, but they do not necessarily originate from public sources.

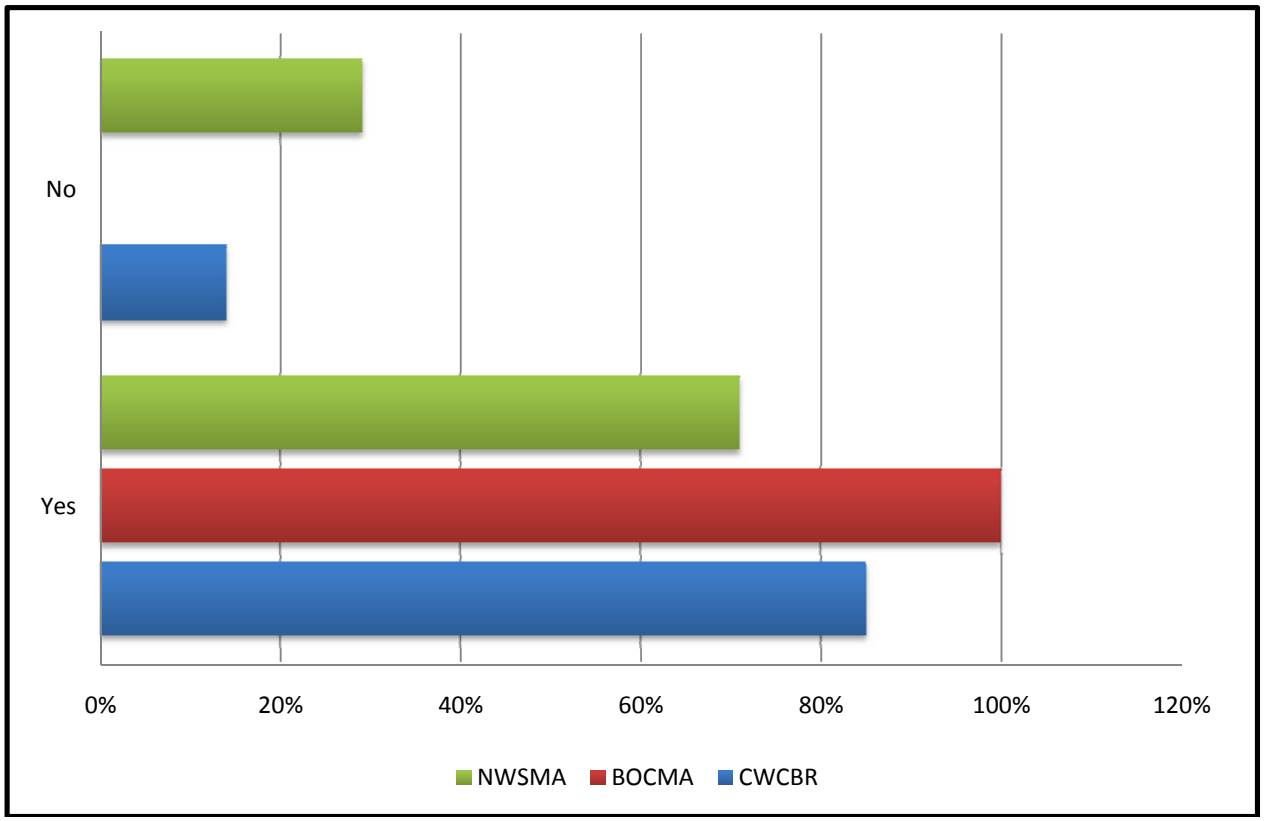

Figure 21: Specific Management Programmes for Conservation Areas

5.6. Structure of Area(s) Related Questions and Responses

5.6.1. Coordination Related Goals (Q4)

Many organisations prefer to achieve any group-related goals or manage group coordination in an open environment. This is most often done in the form of meetings and debates at specific forums. This type of coordination-related goal achievement with managerial aspects is prominently seen in all three conservation areas.

With reference to the CWCBR, most of the conservationists have incentives and are sponsored according to the projects they are currently working on. For example, outside funding helps to motivate people to work on their own projects; yet they are still able to confer with other role-players in meetings and debates.

The NWSMA relies solely on conferring with the executive in meetings and debates. Because the area is relatively new, they need to confer with each other for the sake of effective management and effective co-ordination.

The BOCMA is the most co-ordinated area in that it has the most balanced relationship between the various methods of managing the different group goals. This means that they use each method equally to establish which one works most effectively. This is necessary as the area is relatively new and still needs to establish which method is the most applicable to the area. Each area has various methods of managing co-ordination, yet it would seem that each method works for the various stages of environmental co-management each area is in.

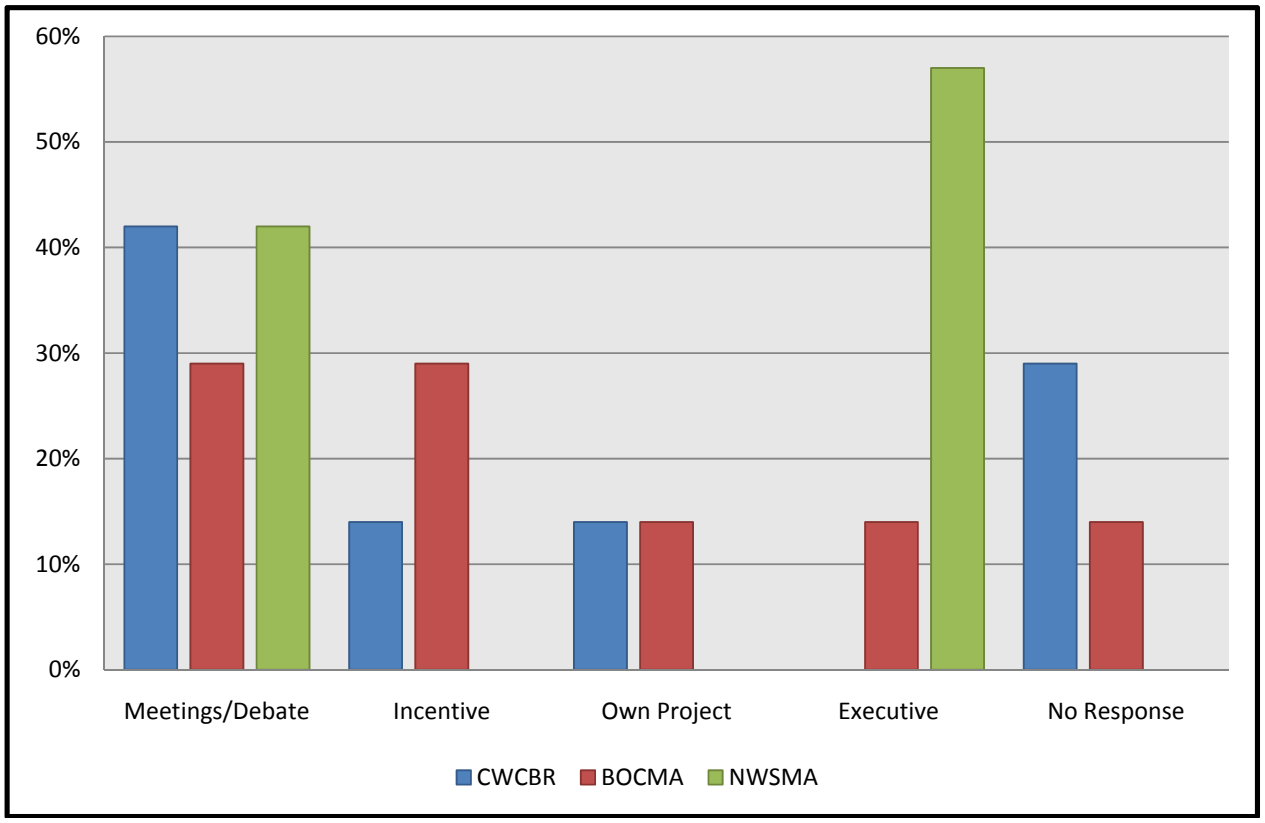

Figure 22: Objectives and Activities for Conservation Areas

5.6.2. Conservation Mandates (Q13)

According to Müller's (2007a: 26) framework for the assessment of environmental governance structures, the incoherence characteristic is described as co-operative arrangements which are defined by policies that affect a variety of participants in the same or similar field. Thus far these policies have different goals and requirements. The purpose of this question was to discover if different governmental departments are indeed involved with similar or overlapping processes. The purpose was also to ascertain if various programmes and policies of government with different goals were affecting the three areas. The general agreement for the CWCBR and BOCMA was they were, as these two areas are more involved with government and governmental processes than the NWSMA. The general answers for the NWSMA were that the conservation area does not have different mandates, mainly because it is a private organisation, even though it does adhere to conservation policies and laws.

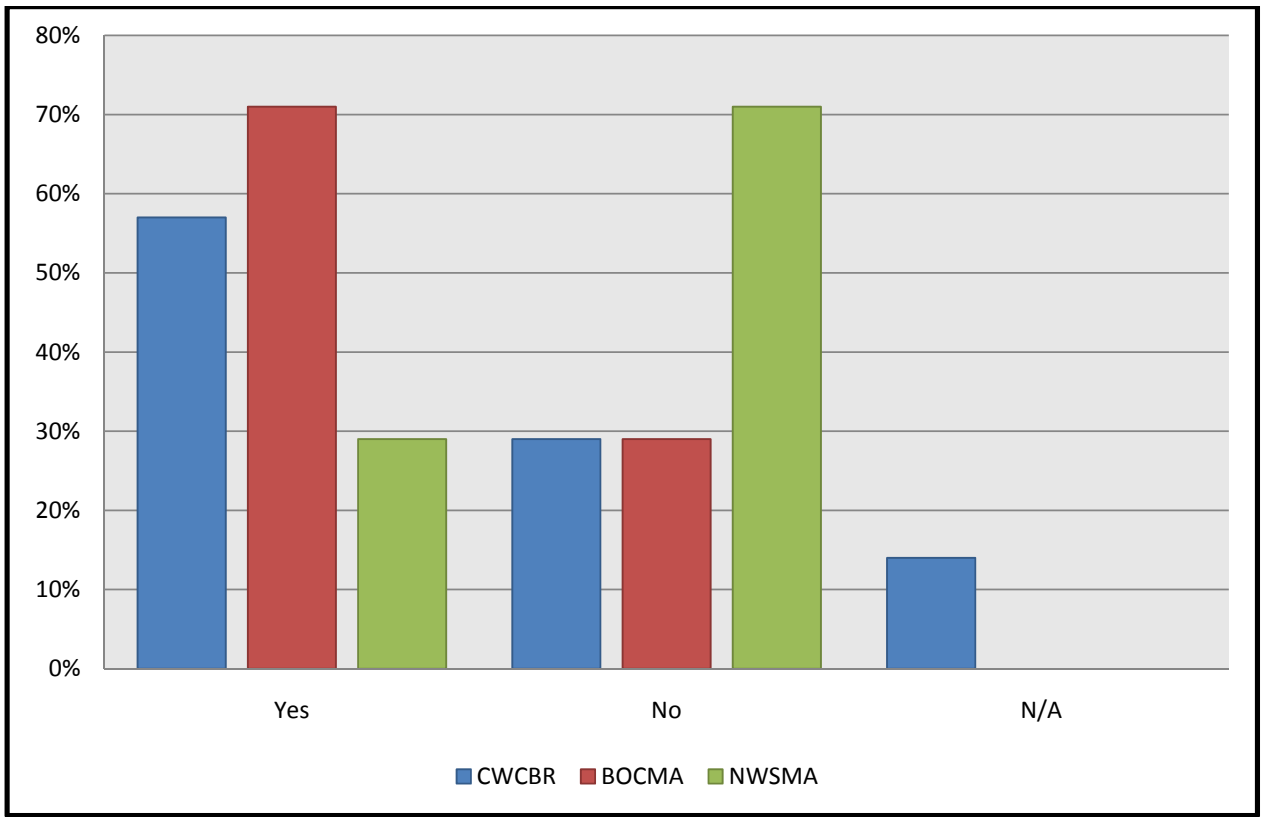

Figure 23: Different Mandates for Conservation Areas

5.6.3. Network Structures (Q14)

The NWSMA follows a close-knit, tight structure which binds the whole group together. This is because the conservation area is privately run by the LOA. There is a strong constitution in the LOA organisation and because of the difficulty to simply join the organisation the constitution the organisation formed creates a tight structure. Also, the structure is tight because financing is dependent on stakeholders. This causes the expectations to be more closely monitored, so that they can be met in a way that fulfils the requirements. The CWCBR and Breede-Overberg CMA have more reign to work with, their structures are looser. Because the BOCMA is still relatively new, the organisation has leeway to experiment within the confines of policies and programmes implemented in order to discover which option is in the best interest for the organisation. Once the organisation is more developed and more formally structured, the structure will become more tight and strict.

The CWCBR has the most loosely based structure out of the three conservation areas. This is the result of having a challenging balance to maintain between development and conservation. The structure has some formal aspects to it because government policies do play a role. As the governing body and management structures are NGO-based, they can work with whoever they choose to, because the conservation organisation prides itself on being apolitical, which seems to produce the most positive results out of the three conservation areas.

This is mostly because the CWCBR has the reserve's best interests at heart, and does whatever it deems is the best for the conservation area.

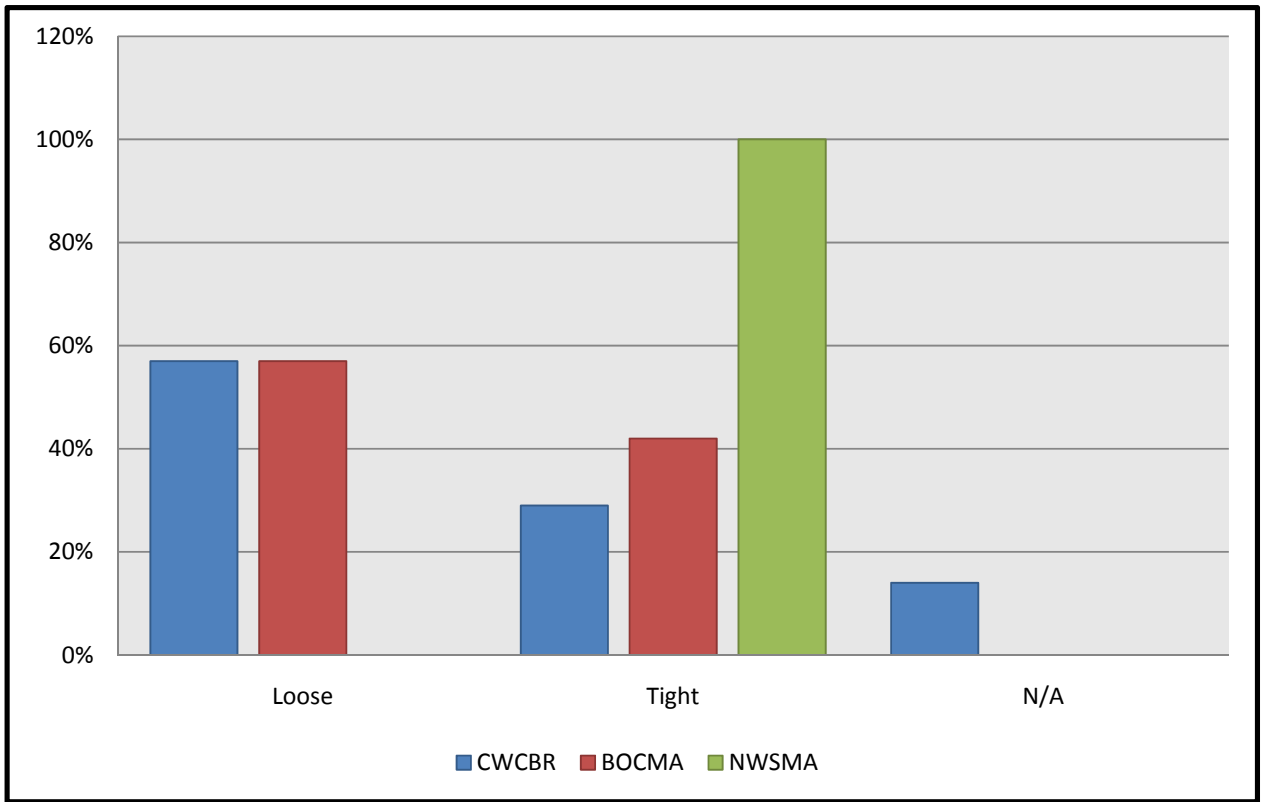

Figure 24: Loose or Tightly Formed Networks

5.6.4. Decision Making Process (Q25)

Decision-making is a rather complex process as there are various methods and stages to it. And as people are all intrinsically different, coming to a mutual or combined decision is often very difficult. This research found that the three areas use a combination of various methods, which include fairly personal decisions (two or more people), meetings, and cooperation between various stakeholders or even formal board meetings, depending on the importance of the decision that needs to be taken. It should be noted that the size of a conservation area plays a role as well. For example, the NWSMA, being the smallest and newest, relies on the more informal process of decision-making – having nearly daily meetings to converse about the progress and problems and what to do about them. They have these discussions mostly in the form of informal meetings. As the area consists of private land owners, less fewer conferences needs to be planned as each farmer has his own land. In the other two areas, however, the areas the stakeholders work on are not where they live, so a broader scope of decision-making is needed. The BOCMA achieves a balance between co-operation, meetings and discussions, yet has not obtained an equal balance between the various options. The CWCBR has the most equally distributed statistics in that it has the option of board meetings, co-operation, meetings and discussions to help them make their decisions. By this is meant that they use each method of decision-making in an equally, as Figure 26 depicts.

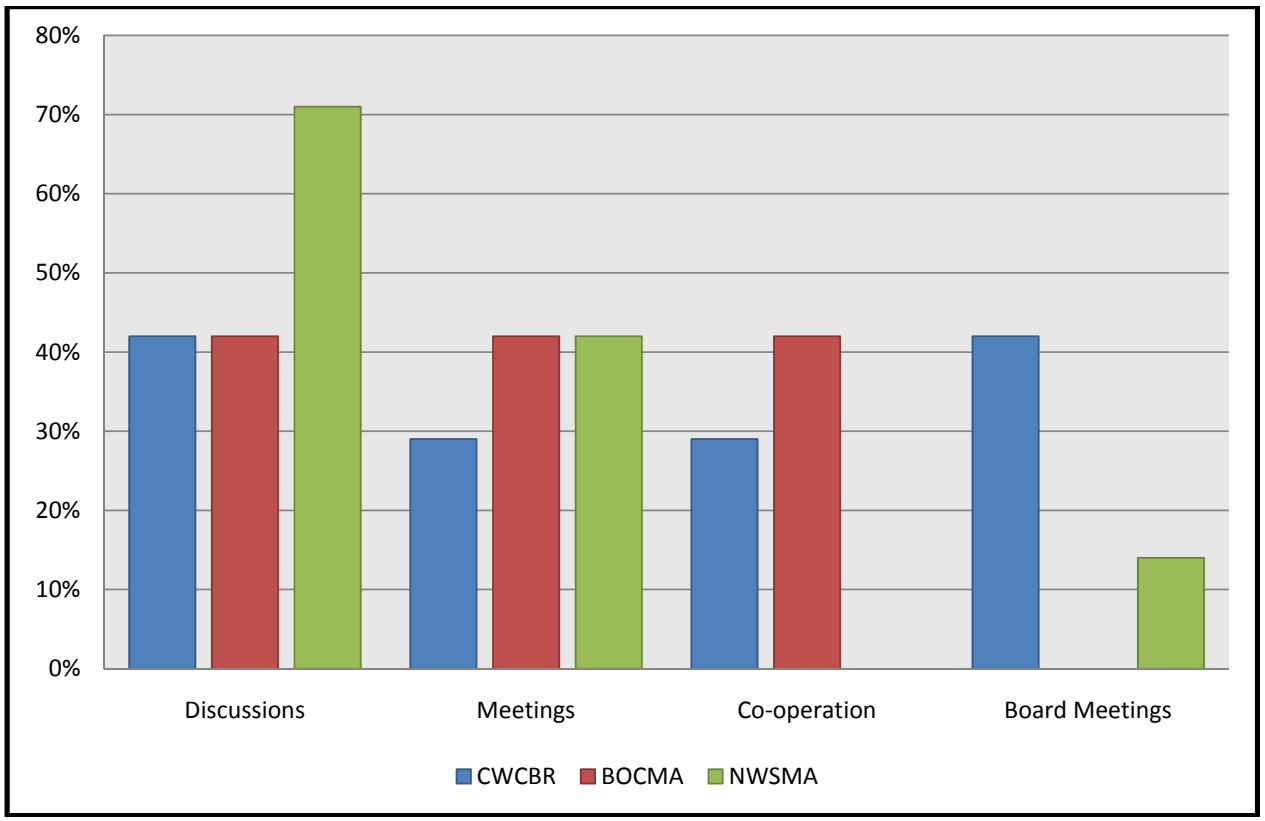

Figure 25: Process of Decision-Making Handled

5.6.5. Authority Levels (Q26)

A characteristic in Müller's (2007a: 26) framework, authority, stipulates that the structure of co-ordination is governed by defining the co-ordination of activities, which includes the way that authority is exercised. Levels of participation are decided by authority in the form of board members consulting constantly with the CEO in the BOCMA. If there is a problem, the CEO and chairperson converse in formal meetings, as the CEO heads the organisation and the chairperson heads the board. Thus, within the BOCMA, the relationship between the CEO and chairperson of the board needs to be excellent for effective management and decision-making. In the NWSMA the board decides as a whole, as the decision needs to be carefully considered because the organisation is private. The CWCBR has a variety of individuals to consult and discuss participation with, although it mainly comes down to the chairperson or CEO, who takes the final decision.

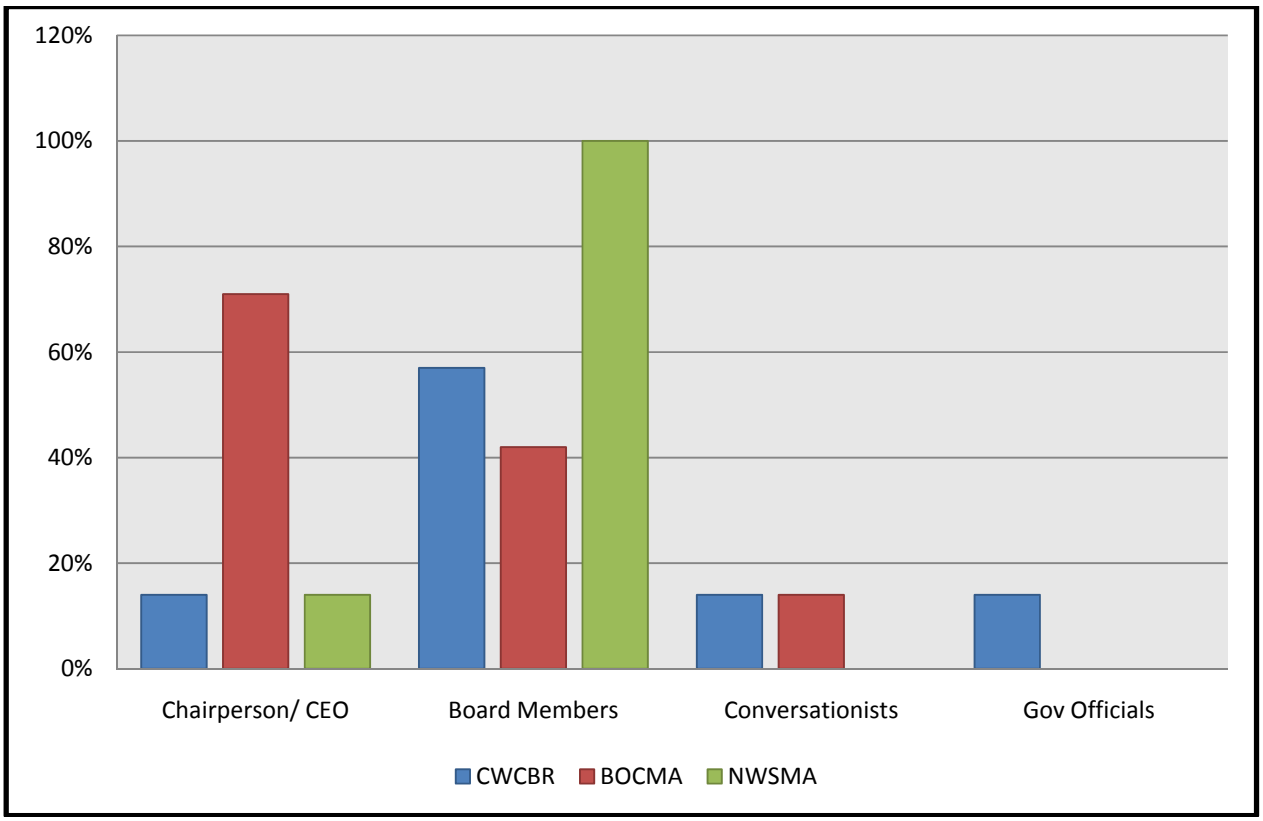

Figure 26: Decisions Regarding the Participation on Various Levels

5.6.6. Authority Criteria (Q27)

Referring to the previous graph, Figure 26, the decision the various parties make is based on certain criteria. For the CWCBR, these decisive factors are mainly based on the willing participants' qualifications, their previous work of experience, their commitment to the area as well as availability, and various stakeholder involvements.

The CWCBR encourages local communities to become members so as to have a say in what happens in their surrounding environment. There are other factors such as funding, availability and commitment to the area, but these play a smaller role as the CWCBR has a membership programme in place where local community individuals can become involved in the conservation area. The BOCMA and NWSMA have more evenly based standards of determining the criteria. By this is meant that these two areas use more than just one or two specific criteria, but rather use a wider range of criteria to determine how authority is exercised. The BOCMA bases these criteria mostly on qualifications, work experience and commitment to the area. Other factors such as stakeholder involvement and availability play lesser roles as the Minister of the Department of Water Affairs primarily decides on how the CMA is run. The NWSMA has more balanced conditions, the most important factor being availability to the area. Qualification, stakeholder involvement and commitment to the area play more or less equal roles. These factors are just as important as they determine how and why the conservation areas hire or accept members.

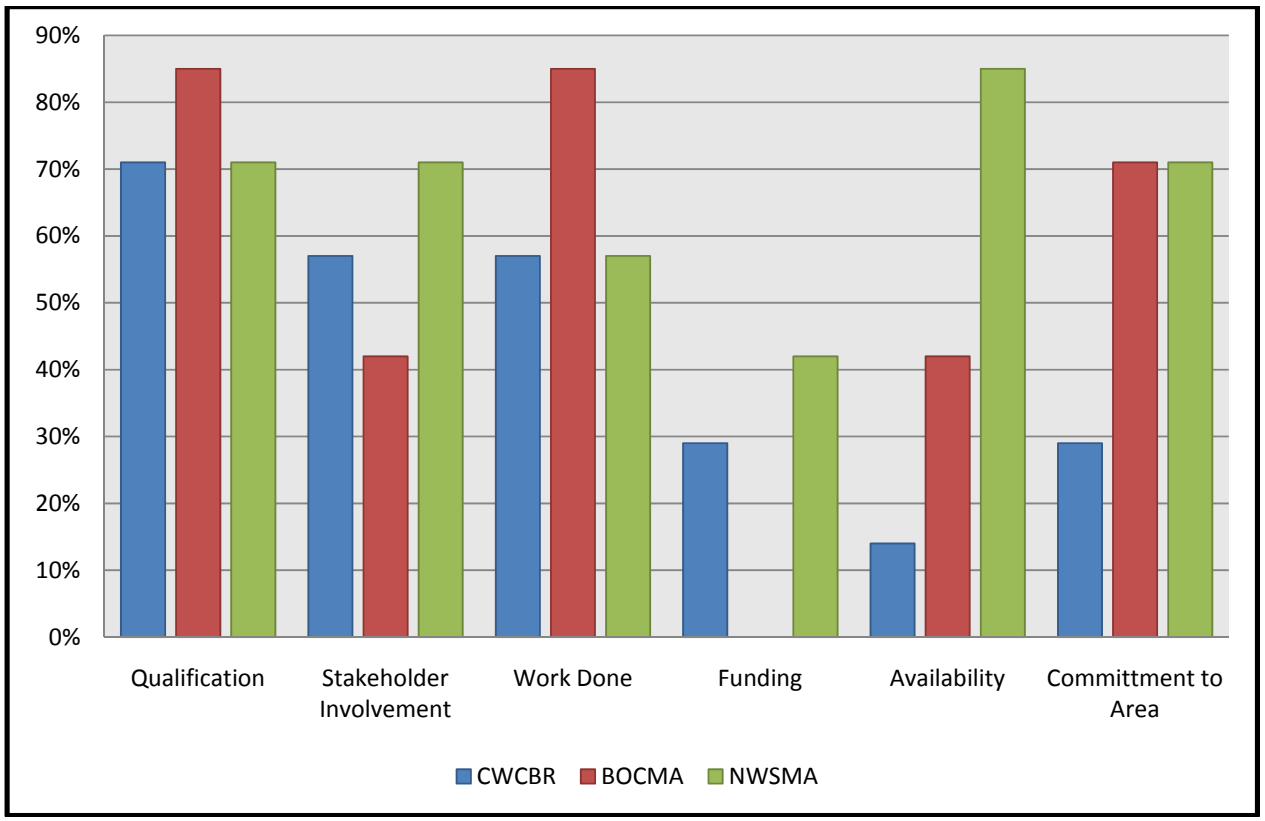

Figure 27: Authority Criteria Participation is based upon

5.6.7. Chain of Command (CWCBR – a) (Q28a)

In making important decisions, it is often, if not always, found that a hierarchy or chain of command is followed. Within the CWCBR, this chain of command is headed by two entities, which are linked between the director and the chairperson on the board of directors. Governmental officials and other members such as programme managers, policy makers and conservationists fall next in line in the hierarchy.

5.6.8. Chain of Command (BOCMA – b) (Q28b)

As noted in 5.6.5. (Figure 26), the board of directors makes the more challenging decisions. The board of directors takes precedence in the hierarchy, while the CEO is second in the hierarchy. Other important participants include policy makers for the area, senior managers in the CMA, the chief of the finance office within the CMA, and conservationists on ground level. The highest position in the hierarchy remains the Minister of Water Affairs, who takes all of the most challenging and important decisions. Because of the prominent role of the Minister, government officials are also high-ranking, yet despite the high level of the government officials are on, they are also included on the board so that they form part of that section of the CMA as well. There is also a representative of the Provincial Government, and a representative of statutory environment (SANParks) on the board. DWA is represented as an ex-official member on the board.

5.6.9. Chain of Command (NWSMA – c) (Q28c)

The board of directors of the NWSMA is made up of the land owners association (LOA), which is foremost in the hierarchy followed closely by the chairperson and director. According to one participant, the government is relevant in the NWSMA, but not in the form of officials but rather in the form of legislative requirements. The government plays a more prominent role in the Agulhas National Park (ANP) – which is managed by SANParks, which is a statutory institution – than the NWSMA, even though the two are connected in conservation manner mostly, not on a state level. The LOA make decisions as a Section 21 Company for the area, thus making it a factor as well. In each conservation area it can be noted that the board of directors plays the most prominent role in terms of the chain of command and hierarchy.

5.6.10. Structural Formality (Q29)

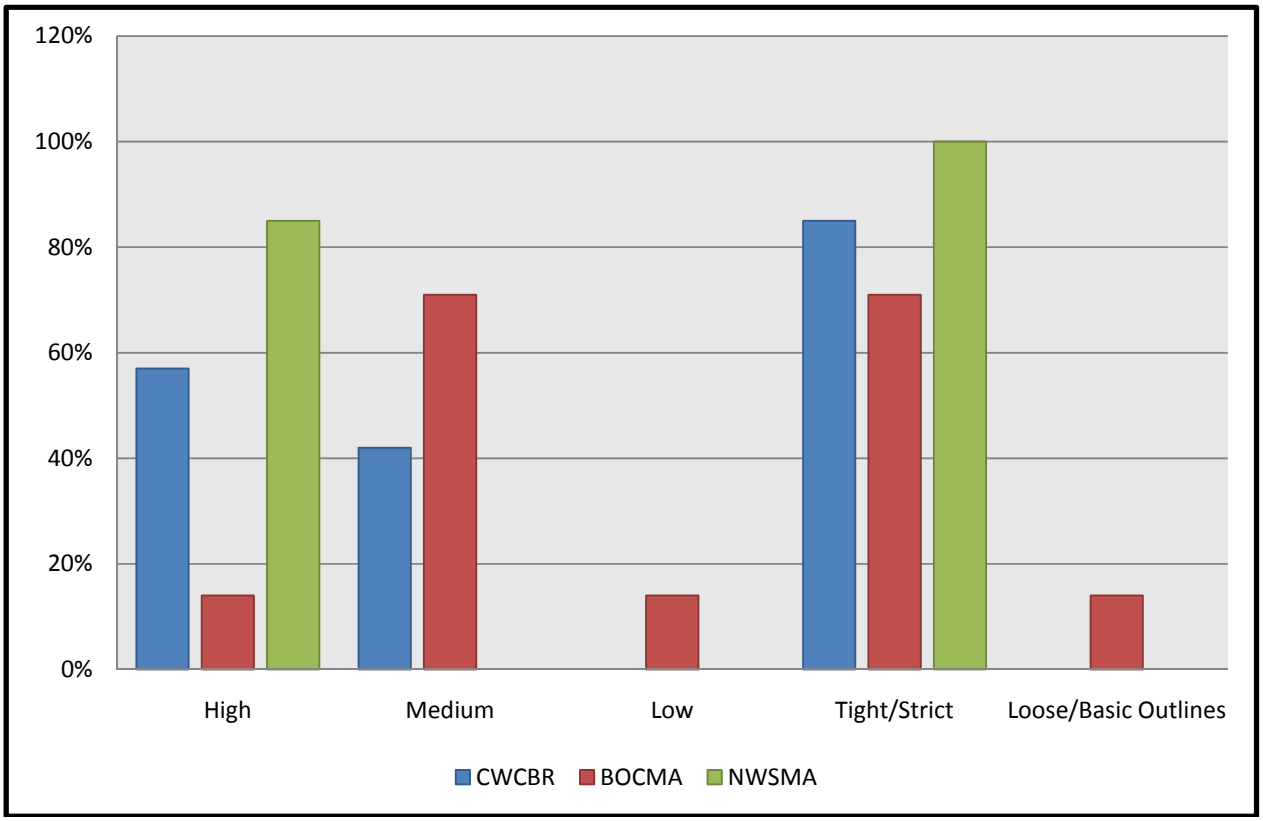

Figure 28: Level of Formality in Organisational Structure and Legislation

A level of formality can affect an organisation to such an extent that it influences the likelihood of producing effective co-ordination (Müller 2007a: 26). Structural formality, on any level, is imperative in an organisation as it encourages participants to attain the outcomes of their specifically assigned goals according to the correct procedures. It also determines the mode of interactions between the participants of organisations. Within the CWCBR the representative structure ranges between highly formal and a level of medium formality, depending on which level of structural formality the participant is on. For example, appointed conservationists have less official formality between them, but when communicating with higher levels within the organisation the level of formality

increases. In accordance with legislation, the structural formality followed is strict as the organisation already has all the structural formality specified in constitutional guidelines. On the other hand, the BOCMA functions on a level of loosely structured formality and basic outlines to work pertaining to their guidelines and the formality thereof. The reason for this is that a CMA can still be classified as a relatively new concept and in order to discover which structural formality level would work to the maximum potential for the conservation area. A small degree of trial and error in methodology has to be granted in the CMA's best interests. According to an interviewee, the organisation, because it is small in size, has a distinctive medium level of structural formality. The NWSMA deals with many international stakeholders and governmental conservation organisations, such as SANParks, which requires a high level of structural formality and following of strict legislative requirements. The NWSMA formed a specific Agenda 21 which is closely monitored and shadowed. Following legislative prescriptions strictly is imperative for the constructive development of an area, regardless of the type or initial structure of the area.

5.6.11. Formal Decision Making (Q31)

Decision making is a difficult process as each person has their own opinion, and varies often, those opinions are in conflict. Managers often struggle to make strategic managerial decisions because all the factors involved need to be considered and weighed against each other. The final decision outcome to be made by the manager or CEO has to take into account what is best for the collaborative resource management area. People in an organisation are chosen to help with the process of decision-making based on performance indicators and their insight. Thus, Langley (1991: 79) states that organisational decision-making can be seen as the outcome of a variety of interactions between different individuals with different levels of formal authority, while having different opinions and motivations for making the decisions. All three areas involved (CWCBR, BOCMA and NWSMA) have a formal decision-making process.

5.6.12. Defined Chain of Command (Q33)

An organisation needs a hierarchy and structure to survive and function at optimum levels, as well as having one or several people at the top of the hierarchy with the best interests of the collaborative resource management area at heart. Each of the three areas has clearly defined chains of command and leadership structures. Each person within the conservation area knows who they need to report back to.

5.6.13. Overlapping Mandates (Q34)

Redundancy is often a problem in any organisation, not only in conservation organisations. Müller (2007a: 26) defines this characteristic as co-operative arrangements that overlap as two or more organisations are performing similar, if not the same, tasks. In the NWSMA this is less of a problem, but rather seen as a necessity as no one person has a specific job, everyone is involved everywhere all the time. The methods used are to plan, strategise and execute the job on all

levels of management. However, the interviewees disagree to a certain extent. As some of them are involved in different aspects, it can be stated that some areas do not overlap. In the areas where performing similar jobs does overlap, this is seen as an essential feature and not as a conflict of interests or a problem.

BOCMA definitely has overlapping sectors performing similar jobs. The apparent overlapping of functions is not really an issue. There are some similar activities that need approval by BOCMA/DWA as well as Environmental Affairs such as building of dams or river works, but each institution are responsible for different aspects of the activity. There is good cooperation in this regard. There are clear delegations within the legislation, yet the performance of similar jobs by different individuals can be seen as problematic. This is seen in the CWCBR, where there is a definite overlap in terms of performance in similar jobs by similar role-players. It becomes problematic when something needs to be done in a specific way and the overlapping sectors do not consult with each other to achieve a positive outcome. Problems and strong disagreements are more likely to arise as a result of lack of communication.

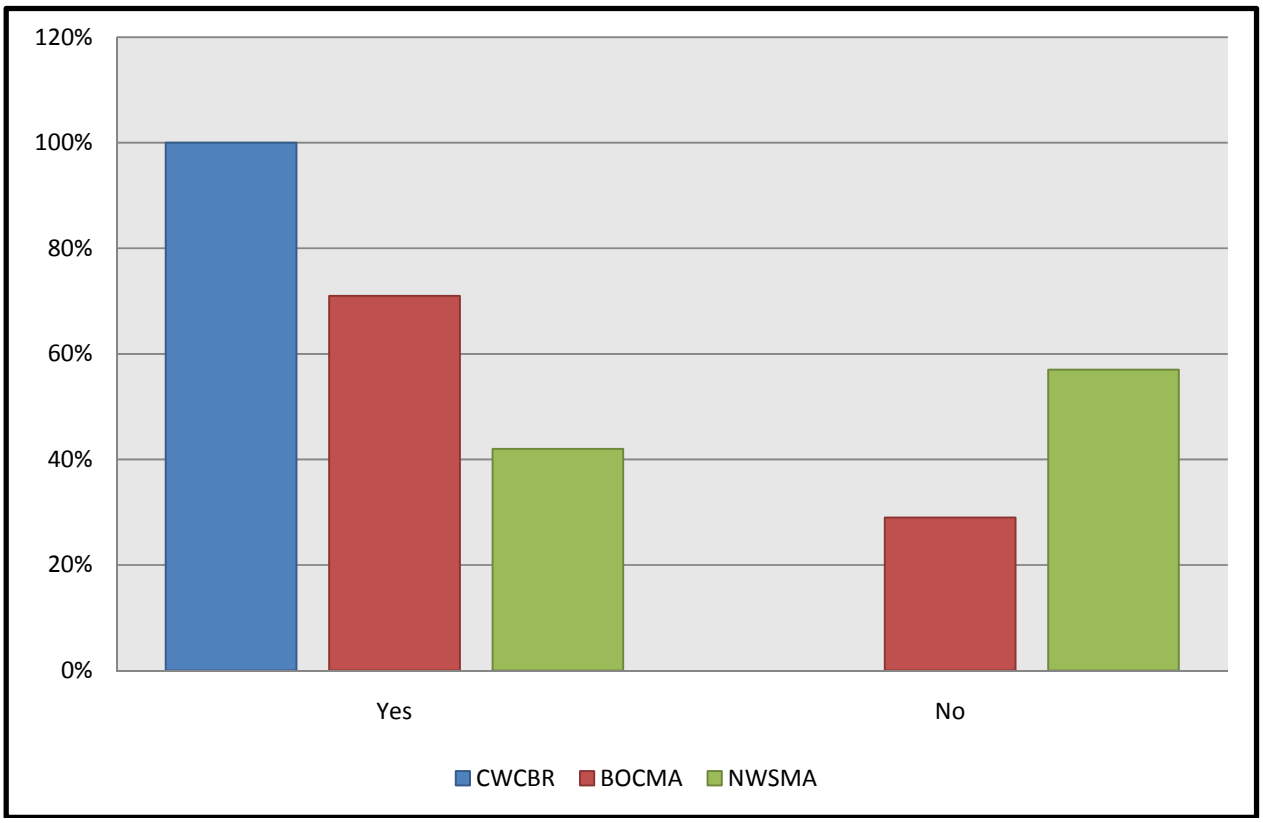

Figure 29: Overlapping Mandates in Performing Similar Jobs

5.6.14. Improvements (Q37)

Having specific aims and objectives is imperative for further developments in an affirmative and progressive way. All areas responded optimistically in foreseeing long-term improvements. Both the BOCMA and NWSMA are confident that improvements will be made in the short-term as well. As the CWCBR is currently in

the middle of internationally funded projects, the focus is on the end result of these projects; thus there are more expectations for the long term than for the short term for the CWCBR.

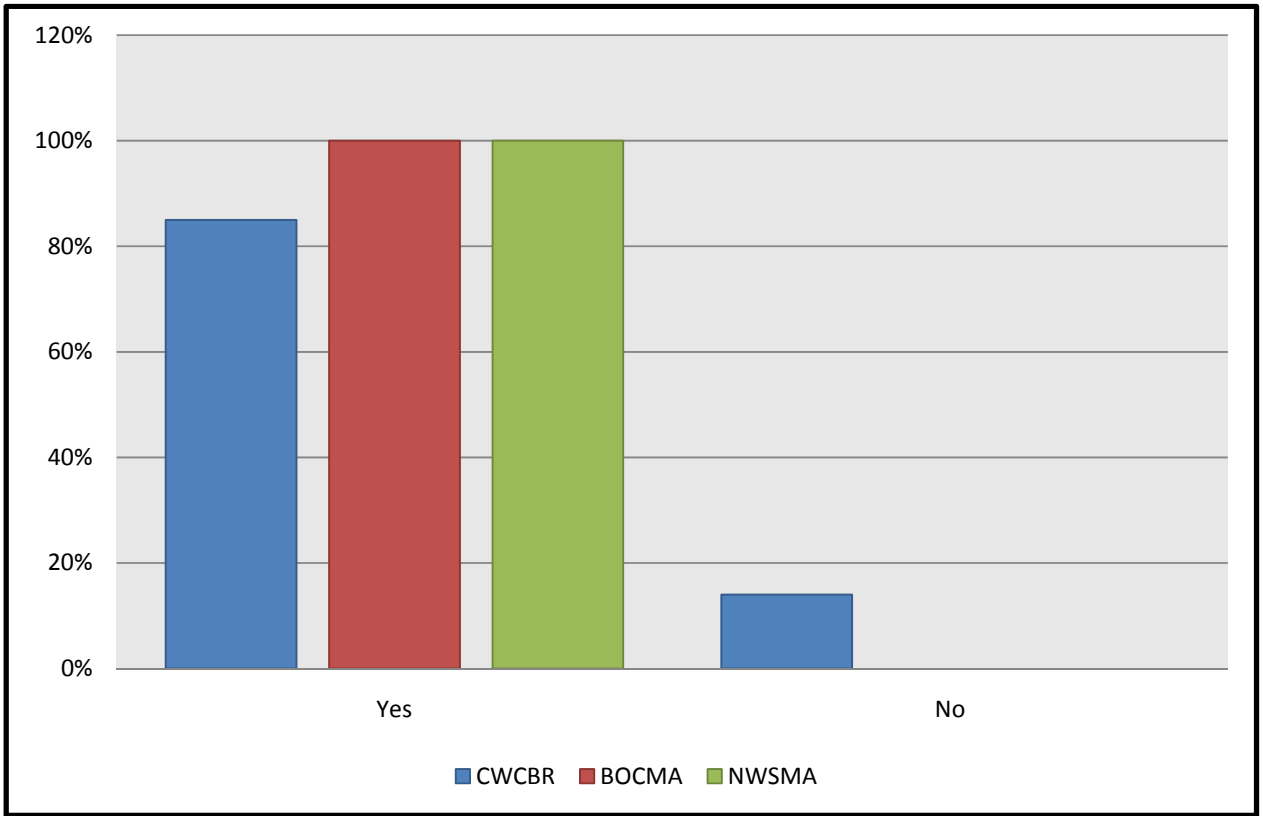

Figure 30: Short and Long Term Improvements

5.7. Problems in/of Natural Resource Management Area(s) – Related Questions and Responses

5.7.1. Core Problems (Q5)

Problems are found every organisation on every level and in any sector. Within the collaborative resource management areas several factors can become problems over a period of time if left unchecked, or they may even occur as an initial problem when the conservation management appoints new employees or takes on new stakeholders and projects. Because of the threatened status of biodiversity, the maintenance and management of conservation areas are essential. Several core problems within conservation areas include maintenance, co-ordination, management, funding and communication. These are not all the problems which occur in natural resource management areas but they appear to be the primary areas of concern within the three natural resource management areas discussed here.

The core problems which occur within the NWSMA are mainly related to funding and maintenance to the area. Maintenance, or the lack thereof, can be attributed to the problem of lack of funding. Oversees stakeholders contribute to the various projects that the NWSMA is involved in, but once the project is done, the funding

stops. If there is no funding, all the other core problems arise, as there are no resources for effective maintenance, and operational management and co-ordination. Communication difficulties arise from problems in time management as each land owner has his own land to oversee as well as the collective protected conservation. Once effective and constant funding can be secured, several of the related core problems will be alleviated.

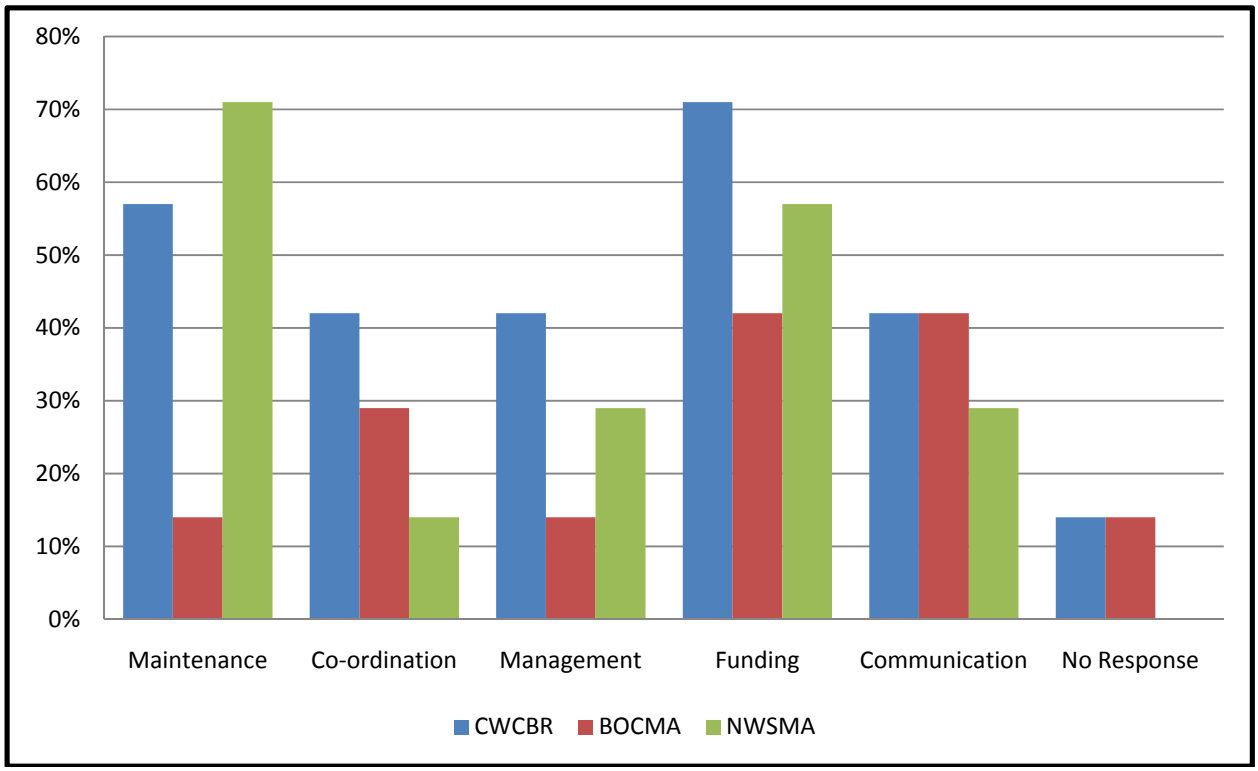

Figure 31: Core Problems in Conservation and Management

The BOCMA faces the opposite situation to the NWSMA as they are completely and comprehensively funded by government. Yet funding came up as a core problem in the progress of this research, because of the irregularity between promising funding and the actual deliverance provision. The BOCMA nevertheless has a good relationship in terms of funding and people in charge of it as a result of the effective management of the relationship by the CEO. An organisation can never get enough funding, as there are always aspects to improve and areas to develop and expand. Communication remains a battle as a result of the language barriers. As South Africa has a diverse population, and eleven official languages, people on the board of the CMA are from different backgrounds and thus there are language barriers. Another reason for the language barrier is that the national government works mostly in English. Management and maintenance do not play a significant role in terms of problems because the organisation is relatively new and small, which makes co-ordination easier.

The CWCBR operates on a strategic level, which - according to its members - is the best possible option to view environmental problems rather than on a grassroots level. Conservationists and members of the CWCBR are encouraged to

rather create projects so as to bring funding in. Core problems in the CWCBR involve funding and maintenance. Because the natural resource management area relies on projects the conservationists come up with, funding is never a guaranteed factor, but is rather a large variable. Maintenance relies on funding, thus it can become a larger problem if the stakeholder funds are removed. Other problems include management, but co-ordination seems to feature as the least problematic of the core problems.

5.7.2. Individual Problem Solving (Q6)

When discussing problem solving with each participant, it was discovered that there are varying opinions and preferences when solving problems. Some of the opinions expressed from the participants for the CWCBR which arose include more co-ordination between the various workers and effective debate in meetings. Biosphere reserve officials should play more of a strategic, co-ordinated role as they do not have the manpower to be implementers as separate entities. Projects should be outsourced and overseen or managed. Improving public awareness came up as a solution in that people should be made more aware of the environment through awareness campaigns and activities to motivate support for the cause such as “green” walks. Target groups should be businesses and corporations. Seeking more funding is a possibility as more skilled staff can then be employed to manage the projects.

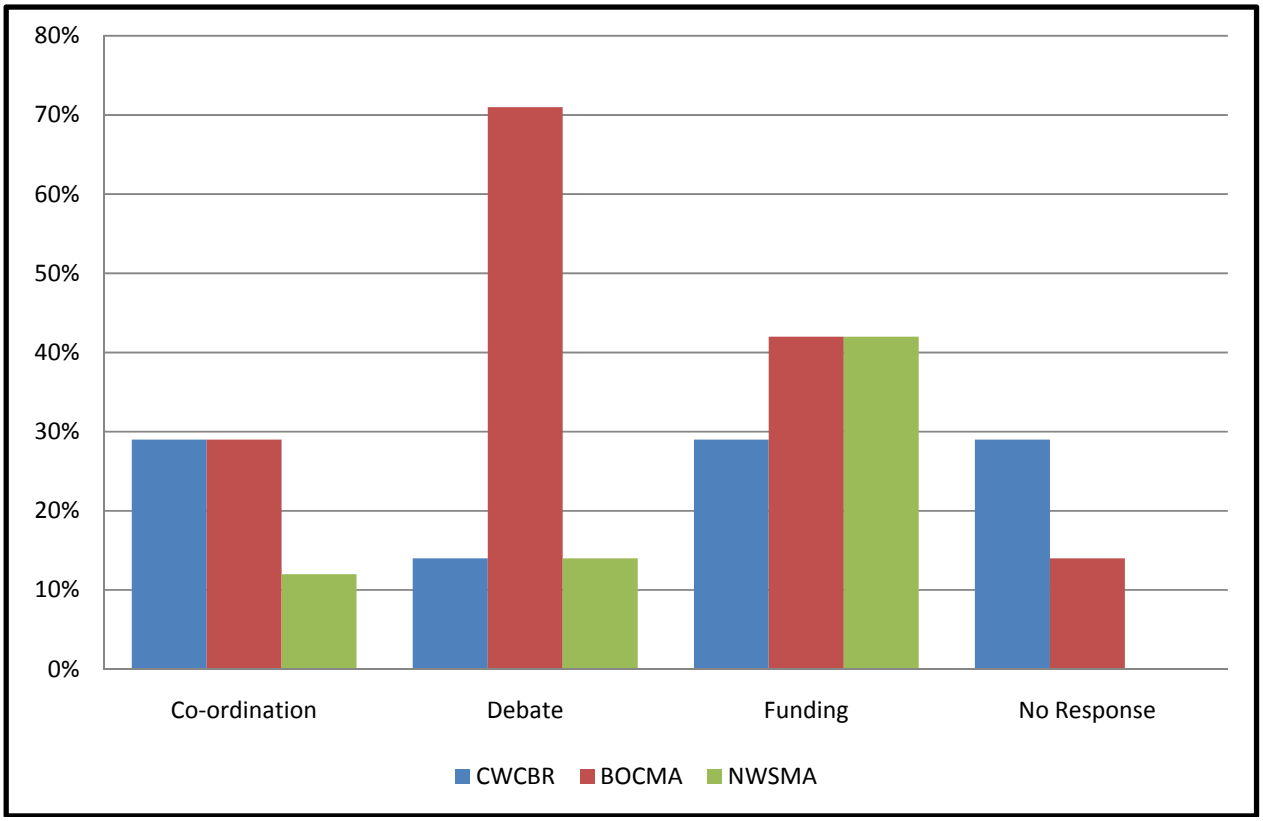

Figure 32: Individual Problem Solving

Solutions for the BOCMA included options such as applying for private funding where possible, employing more sufficiently qualified personnel, more effective prioritising and organising. There should be more research into where co-

ordination is lacking. Another solution is entering into PPPs. The natural resource management areas should be dealt with as reserves possibly contracted out so that the conservation aspects are dealt with as a whole and not broken down into smaller compartments. In managing them as a whole, PPPs can be considered. If the area has PPPs, the organisation can be financed by both local government and private stakeholders, so that the management aspects can be dealt with properly on all levels. A lack of understanding of PPPs results in a restriction of this option to a certain level. Once understanding increases, restrictions will fall away. Problems need to be dealt with when they are identified and not once the problem has become worse. With the evolution of PPPs, systematic solutions through meetings and prioritisation of problems will increase. Implementing the laws on water management and usage is also a solution.

Strategic solutions to core problems within the NWSMA involve improving employment options, education and funding. It is essential to find new ways to generate funds and to manage them effectively. Funding management on ground level is not about to occur any time soon. Because the area is a private entity, it is not well known yet, and management is lacking due to funding. The NWSMA needs constant reliable funding. Educating the local communities on the viability and sustainability of conservation and the environment is an important aspect to consider. One option is to increase knowledge of the area on a broader scale than just the local community. Once knowledge of the NWSMA increases, the option of PPPs becomes increasingly feasible. This option would solve not only the problem of lack of funding, but co-ordination and management would then also improve because of increasing funding.

5.7.3. Collective Problem Solving (Q7)

Solving problems on an individual basis has its positive attributes and its negative characteristics; for example, it is beneficial to solve problems because each individual does what they think is best and what they think would be most effective and productive to the conservation area, but the negative side is that what the individual may think is best is not always necessarily so. That is why organisations should have collective managerial problem-solving meetings. This way brain-storming and discussions may benefit the organisation, as an individual of cannot possibly think of everything. Mostly, the methods used are meetings and engaging in discussions to deliberate the best possible options. The most common methods of collective problem solving within the CWCBR include meetings and integrated management between the different conservationists. Working from a grassroots level is also a way to understand the initial cause of the problem and to solve it using a bottom-up approach.

The BOCMA goes about collective problem solving by being more open to suggestions and by applying what has been discussed in meetings in order to resolve issues, according to the participants. Also, on the technical side, the managers and CEO cannot outsource the various projects implemented by the BOCMA as it is against their contracts drawn up by the Minister of Water Affairs. The best method is not simply to engage in crisis management. The CEO and board of directors deal with situations outside the organisation that affect the CEO

directly. By engaging in meetings and discussions, the questions and answers which arise on grassroots level from these meetings and discussions, need to be comprehensive and all-inclusive in the solutions in order to be able to implement the solutions effectively. There need to be integrated management and effective co-operation and compromise in discussions by thinking outside the box. Yet it was found that reference to not being able to outsource projects implemented by BOCMA because it is against their contracts is not entirely correct was there are no formal contracts drawn up by the Minister. The water user associations indeed perform functions on behalf of the CMA with required delegations. River health studies are done by CapeNature on agreement basis as implementing agent. Working for Water is also implementing functions with funding from the CMA charges.

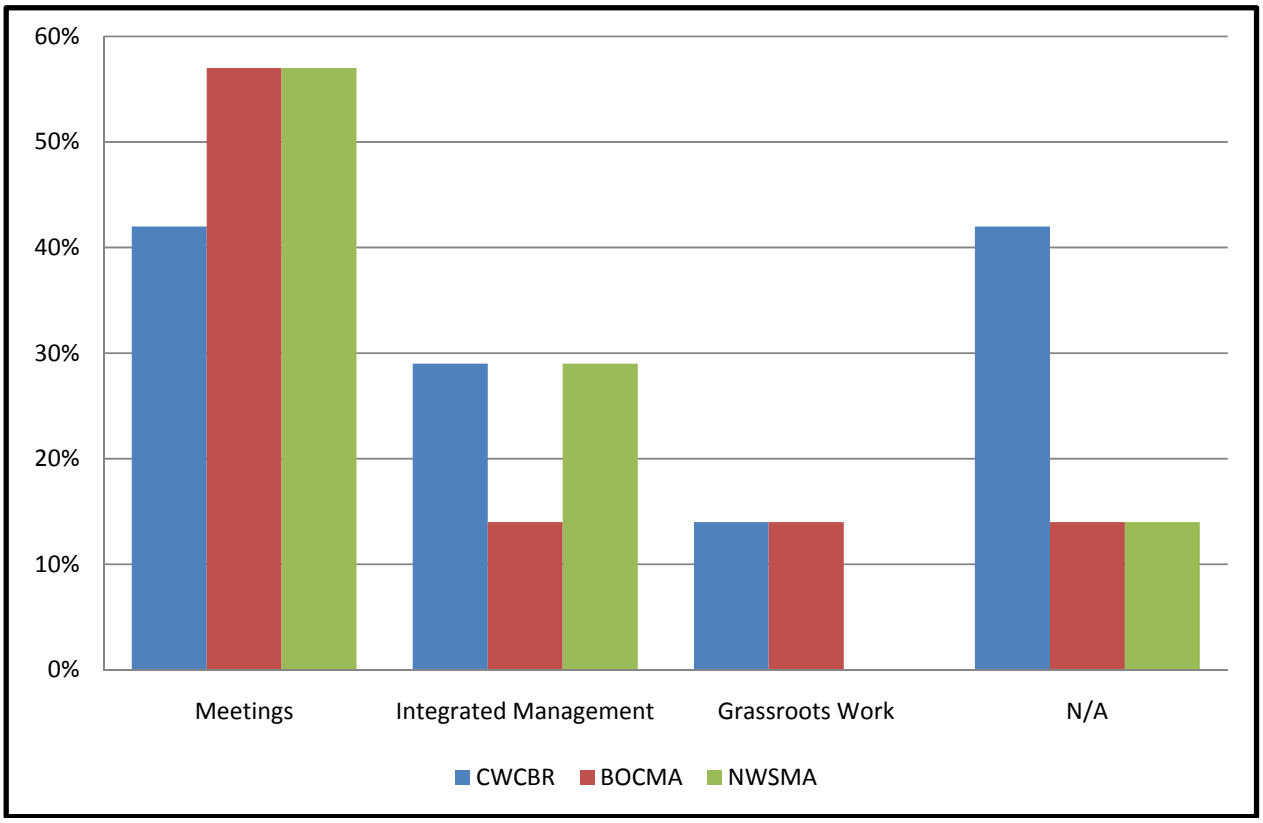

Figure 33: Solving Problems through Management

Various collective managerial problem-solving methods have been tried and tested for three years in the NWSMA, and six years have been spent trying to find a way for Agulhas to be sustainable. Because there has been no change over the past three years in the NWSMA, management is busy implementing steps to increase funding in this specific area of concern. Solutions vary, many of which include strategic resource allocation and planning ahead. Good communication in meetings and discussions are key solutions when aiming to resolve core problems.

5.7.4. Identifying Problems (Q8)

Identifying problems within conservation areas where the problem originates is critical as it is the first step to rectifying the source of the problem. Organisations have different methods for doing this, and different possibilities for stakeholders

are available. For example, the CWCBR and BOCMA have the option of local community members reporting any problems they might notice within or around the conservation area which directly affect the area. The NWSMA relies more on daily meetings to discuss any problems the land owners might notice on their own specific land and then discusses the land as a collective entity. Dealing with problems in the BOCMA is not a serious concern, because the managerial structure is still relatively new. The CEO and chairperson discuss all viable options with one another. In the BOCMA human resources department deal with more interdepartmental concerns so that the board and CEO can focus on conservation and its management. Yet it was found that interdepartmental liaison is part of the functions of the CEO, water resource managers and water liaison officers.

The NWSMA land owners association (LOA) has good communication in meetings because the LOA acts almost like a board of directors. Getting information to the members takes time as it is done in documented form. The LOA communicates information to the executive director in meetings, but will try to avoid making constitutional changes when problems arise, except when necessary. If employees or conservationists encounter a problem of a sensitive nature, they can discuss it with their supervisor, who can then decide on the correct actions to take. It is essential for communication to take place effectively and in an efficient manner so that information on problems is not misinterpreted or the problem misdiagnosed.

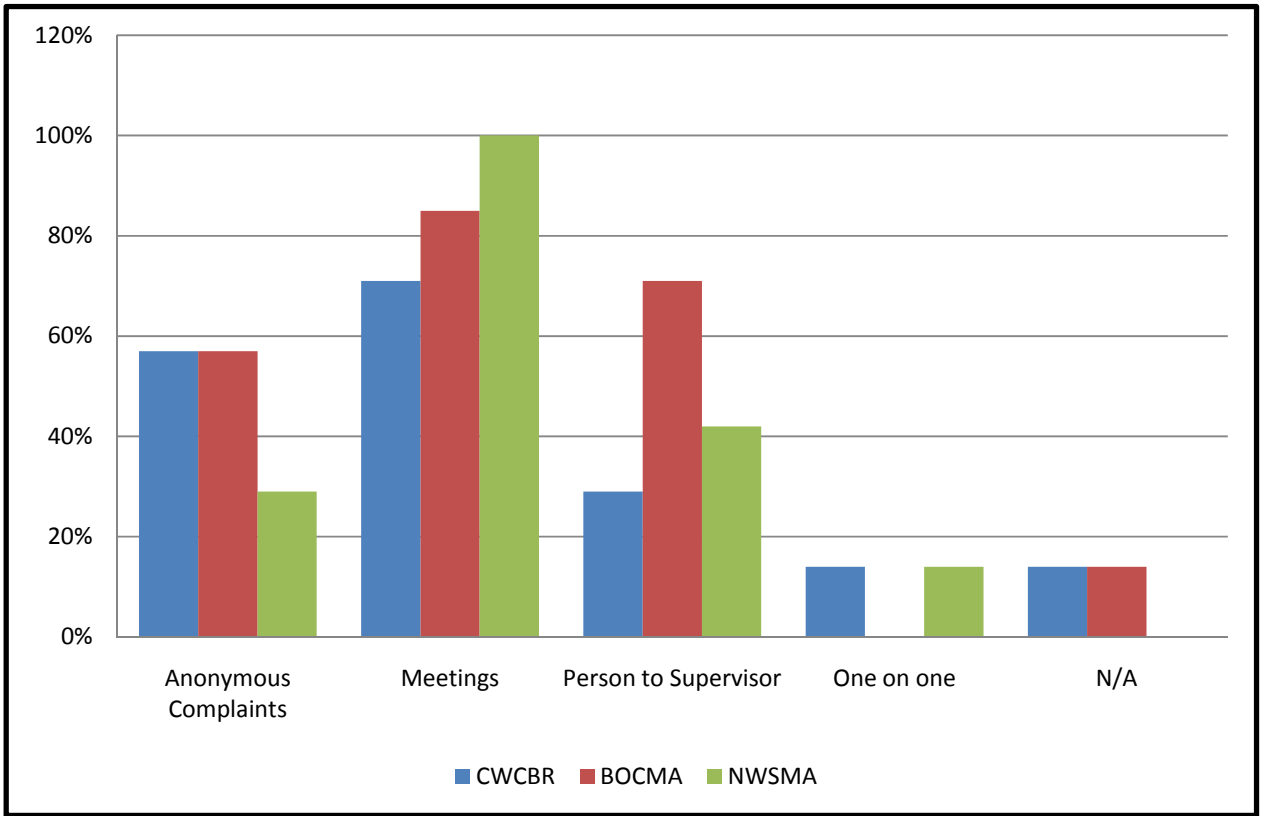

Figure 34: Identifying and Dealing with Problems

5.7.5. Resource Conflict (Q38)

Resource conflict is a serious problem worldwide. Natural resources are becoming scarcer and renewable energy is not being utilised effectively.

As resource conflict is a problem which affects everyone, it was necessary to obtain different viewpoints from a variety of participants to understand how they observed the problem. The most common response was the need to educate and train people in sustainability and how to save or at least protect their environment one small step at a time. Possible options for resource conflicts that came from the CWCBR participants included talks and teaching people about the importance of the environment and how valuable these resources are. Education and raising funds are a key way to support conservation areas. Fundraising is essential and good fundraising skills should be part of the human resources in the organisation. Mediation is another possible solution, as well as resource control which involve managing resources in a controlled environment, if possible. Dealing with resource conflict should be done as they arise and should not be left to become more extensive problems in the long term.

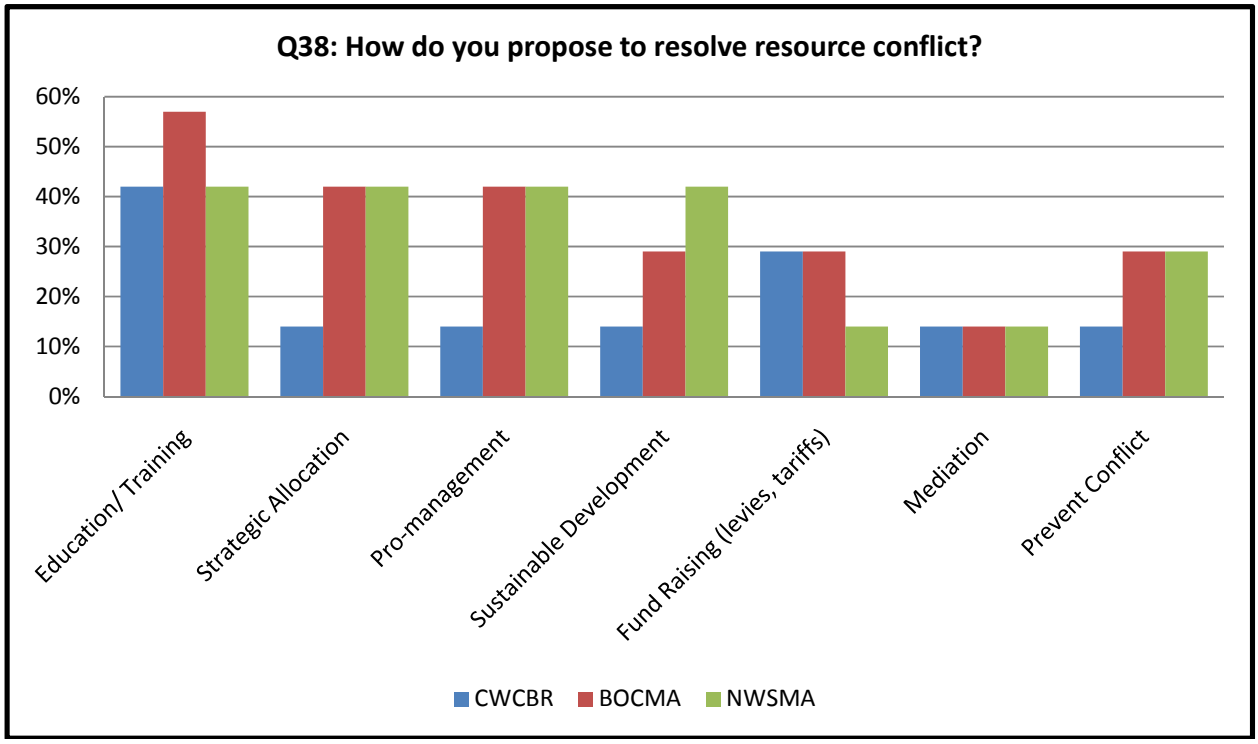

Figure 35: Solving Resource Conflict

The answers received from the BOCMA participants are more water-resource based, which is understandable as the BOCMA is a water management system. Educating people about conservation and water and the variety of ways on how to save it are imperative. Also, training new officials and employees in an effective manner so that they can carry out their jobs properly and be able to deal with conflict as it arises. It is necessary to discover what the conflict is about and then propose a meeting to discuss and resolve it. One interviewee stated that in order to resolve the conflict around water, BEE (Black Economic Empowerment) farming needs to work and become effective, but by adopting different methods to what government has been doing, because they have been ineffective. Partnership deals need to continue, but they need to be closely monitored. The people who are

given the farms do not have any knowledge to farm the land, let alone farm in a sustainable way. Therefore the farming areas go to waste.

It is essential not to interfere with scarce resources such as agriculture and water. The government spends an excessive amount of money on the farming problem. But there is no one answer to resolve conflict. People need to be qualified to use water, so that they can be responsible in working with it. It is possible to ensure more fresh water by desalination, using grey water and monitoring people's water quotas. It is necessary to manage water usage in an effective and efficient way in order to make it sustainable. Awareness, education and knowledge play a crucial role in water sustainability. Enforcing tariffs or penalties for over-consumption is also a viable option. People need to understand the importance of water in South Africa, because there is a very limited amount of natural resources. Creating a clear awareness of resources managed and not just imposing restrictions is a viable option through creating programmes to help people to save in the small ways and fix the small problems. If the law is disregarded, then high fees should be charged. Yet it can be stated that this factor has extensive positive and negative consequences, as do all solutions. It was further found that some misconceptions might exist, in that the billing function only relates to who send out the invoice and collect the funds. A system is currently nationally in operation to do this for all water management areas. The CMA already are part of determining the charges and it gets the funds back from DWA.

The NWSMA suggested that resource conflict be solved by strategic allocation of resources based on where they are needed most. Prevention and the pro-management of conflict, as well as monitoring and evaluation are also options. The prevention of wasting finite resources initially should be considered. By teaching people how to use resources productively and proactively, as well as management in a sustainable way, a small alleviation of conflict can be achieved. If everyone shared resources, everyone would have resources. But, it seems, human nature is inherently selfish.

5.8. Government Related Questions and Responses

5.8.1. Government Involvement (Q9)

The level of government involvement within the three conservation areas discussed here is highly dependent on the type of organisational structure. The BOCMA, being a statutory organisation, has the highest degree of involvement regarding funding and management. As the minister of DWA is ultimately in charge of the CMA, the organisation is highly dependent on the financial incentives they receive. The CMA will have to create its own funding when billing is delegated to the agency. Regarding management, a government official was on the board of directors; however, the government official is now retired and the governmental position has yet to be filled. It was found that there was no interaction between the Ministry and the CMA. The board and CEO have tried for three years to set up personal meetings with the minister, but according to a participant, her officials tend to block the meetings from taking place.

It is mostly within the sphere of biodiversity management that government is concerned in the NWSMA. Government is not physically involved per se, and according to the members within the area, there is a limited amount of support for projects. SARS is highly satisfied with how the area is run and provides compensation and tax reduction benefits for environmental awareness and policies in place (as discussed in Chapter Three). Government does not give direct funding for the NWSMA and most problems have a tendency to occur in the relationship between SANParks and NWSMA. These problems revolve around funding and time-management-related issues. The national financial department of the South African government is involved, but according to one interviewee, this is only because the area receives international funding. All funding outside of the South African government has the requirement attached that it has to be channelled through the national Department of Finance of the South African government for approval and verification and is then filtered into the conservation area. The CWCBR has a broad spectrum of responses, yet most of government's involvement is positioned and situated within the scope of funding – but only in administrative financing. Attendance of board meetings is where the contributions and participation mostly occur. Apart from playing an advisory role on the governing body, the government is not directly involved in the management of the area.

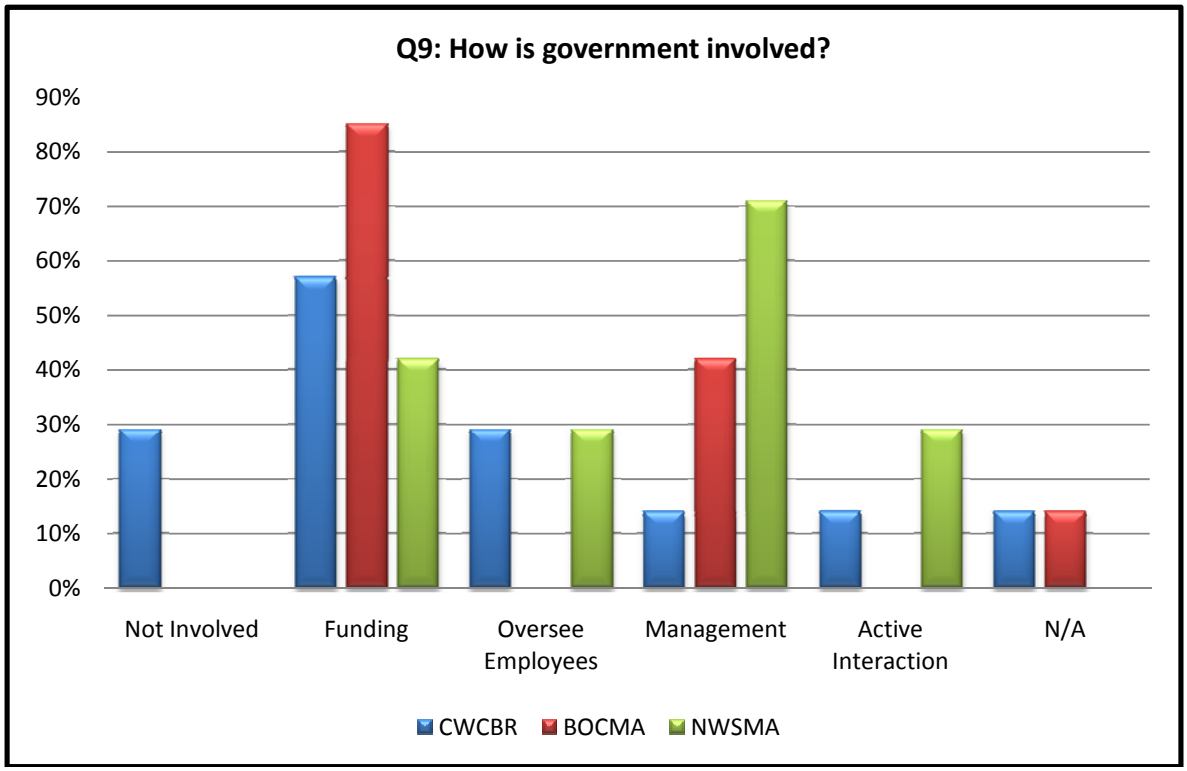

Figure 36: Governmental Involvement

5.8.2. Government Institutions (Q10)

The various sections of the South African government play an assortment of key roles within conservation areas as each subdivision carries out a range of diverse tasks with different objectives – most of the time. It was found that some governmental departments overlap in terms of the various mandates they carry

out. For instance, it was found that the Department of Agriculture, Fisheries and Forestry (DAFF), the DWA and the municipality all play leading roles in the BOCMA. Closely followed in terms of listed importance is the Department of Environmental Affairs (DEA) as the area is concerned with conservation of the river site not just the water resources but as an ecosystem as a whole. The DAFF is involved because of the extensive amount of farming in the area, and the municipality is involved on a third-level basis. The upper Breede river area requires extensive planning so all role players and national governmental officials consult on board meetings. The Department of Tourism (DoT) and the Department of Economic Development (DED) play a small but significant role in that they help manage and promote tourism and economic growth and development in the area. The highest income in the BOCMA comes from agricultural and tourism activities, hence the important involvement from DoT and DED. It was further found that the DAFF plays a lesser role than DEA. DAFF does not manage water and are not so much involved just because most water is issued by private agricultural users. No direct income for BOCMA comes from tourism activities. DoT and even DED is not as actively involved in BOCMA functions. Within the CWCBR the level of government departments involved is more or less equal, the only two departments standing out slightly are the DAFF and the DEA. The municipalities around the CWCBR are involved, but at a lower level than would be expected.

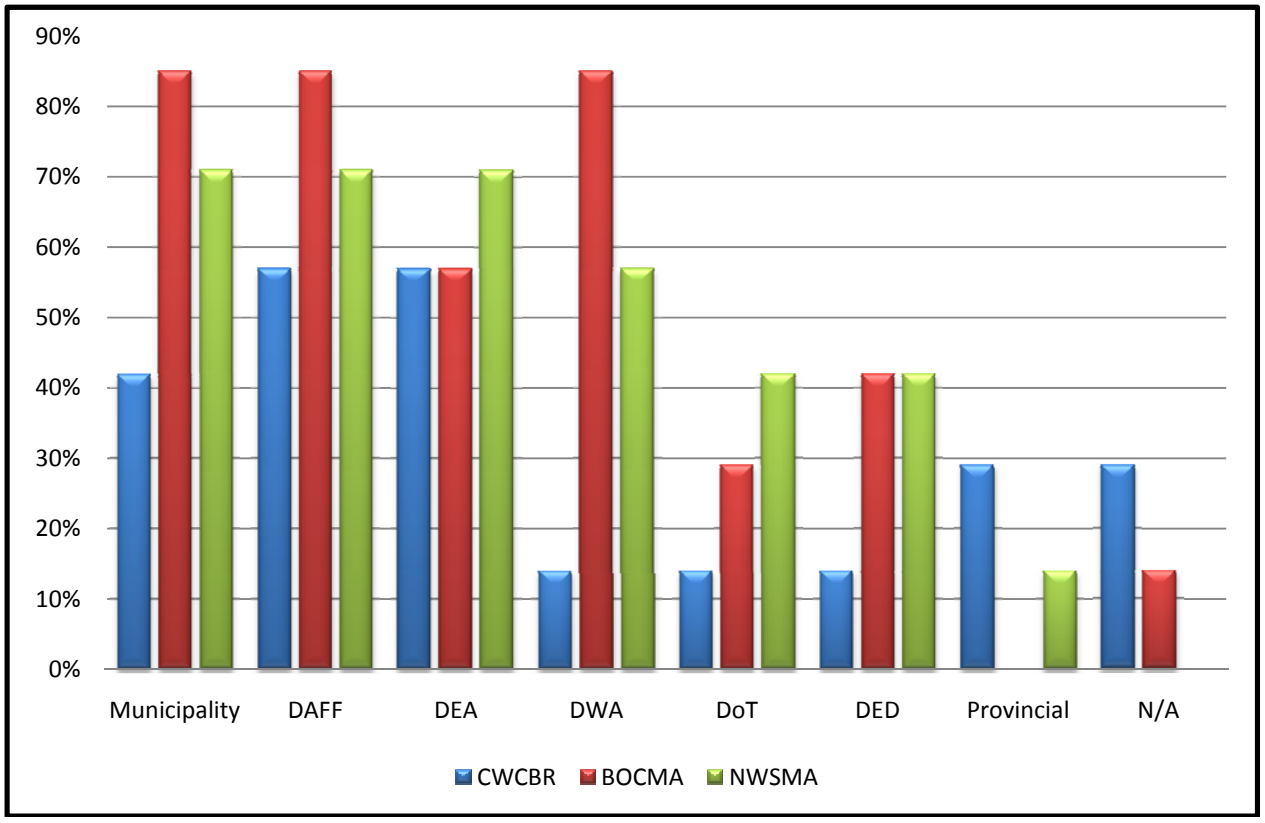

Figure 37: Sections and Departments of Government Involved

The municipality of Bredasdorp, DAFF and DEA participate substantially in the NWSMA. The DAFF plays a noteworthy role because of the vast agricultural practices in the area. CapeNature and SANParks participate in the conservation area; it was found that the relationship between NWSMA and SANParks is much in need for improvement. The level of capacity has, unfortunately, declined concerning municipalities as there has not been a continuous participatory record and involvement has definitely not been constant. The counsellors change jobs at

such a rapid rate that there is no consistency. The DEA involvement includes the provincial department of the Department of Environmental Affairs and Planning. It has become abundantly clear that government departments and local authorities are indeed involved in all three conservation areas pertaining to this research. But it is the level of involvement which is the most significant characteristic. Relationships are in great need of improvement between government officials of the various governmental institutions involved, as well as with the conservationists and managers within the conservation areas. The most important step is to improve the quality of government involvement and intervention.

5.8.3. Government Processes (Q11)

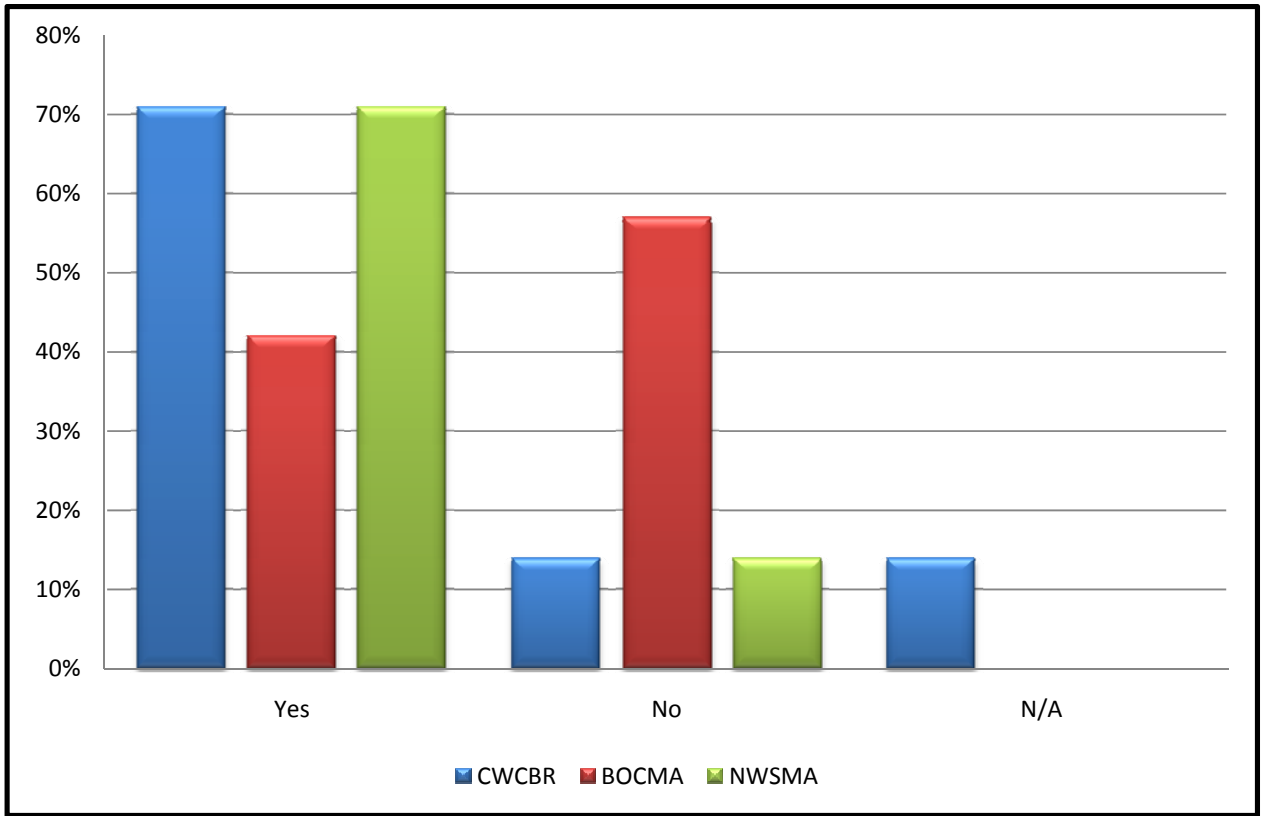

Figure 38: Government Departments Involved in Similar Processes

In order to consider governmental processes, it is necessary to distinguish between active and passive involvement (Jenkins and Henry 1982: 500). Active involvement by government is introducing an action or occurrence into an environment which is purposeful and specifically beneficial to the sector. For example, managerial and developmental actions and decisions are seen as active involvement. Passive involvement comes about when government proposes or implements an action which has additional benefits. Examples of passive involvement include mandatory involvement and supportive actions. In many instances, both types of involvement can be applied to each of the conservation areas considered here, hence the high percentage of positive answers that governmental departments do have similar processes. The BOCMA experiences the least amount of controversy here as a result of the extensive discussion between departments at quarterly meetings and because CMAs are a relatively

newly implemented concept in South Africa. CWCBR and the NWSMA both experience different government involvement in similar processes.

5.8.4. Government Policies (Q12)

Key for Figure 39:

A. The Constitution of the Republic of South Africa (Section 24 of 1996)
B. Environmental Conservation Act (1989)
C. National Framework for Sustainable Development (2006)
D. National Biodiversity Strategy and Action Plan (2003)
E. National Environmental Management Act (NEMA)(Act 107 of 1998)
F. National Environmental Management: Biodiversity Bill (2003)
G. National Environmental Management: Biodiversity Act (Act 10 of 2004)
H. National Environmental Management: Protected Areas Act
I. Strategic Plan for Environmental Sector (2008 - 2013)
J. Department of Provincial and Local Government: Strategic Plan (2007 - 2012)
K. National Water Act (Act 36 of 1998)
L. Integrated Development Plans (IDPs)
M. Environmental Implementation Plans (EIPs)
N. Green Paper on Conservation and Sustainable Use of South Africa's Biological Diversity (1996)
O. Green Paper on Environmental Policy for South Africa (1996)
P. White Paper on Environmental Management (1997)
Q. White Paper on Environmental Management Policy for South Africa (1998)

The environment and preserved conservation areas are mainly the responsibility of the three governmental spheres – national, provincial and local departments of government. Environmental governance has become an essential part of governance and government officials' duties worldwide as local communities have become increasingly aware of the conditions of environmental areas. Since the revealing film *An Inconvenient Truth* (Gore 2006), people worldwide have become more conscious of the state of the environment and what governments are doing about it. They have also become conscious of the state of natural resources and the importance of building a more sustainable infrastructure. As a result of the increasing awareness and general concern over the environment and the state it is in, governments have become more focused on creating policies which protect and conserve areas that are in immediate danger, while creating management plans to protect other conservation areas.

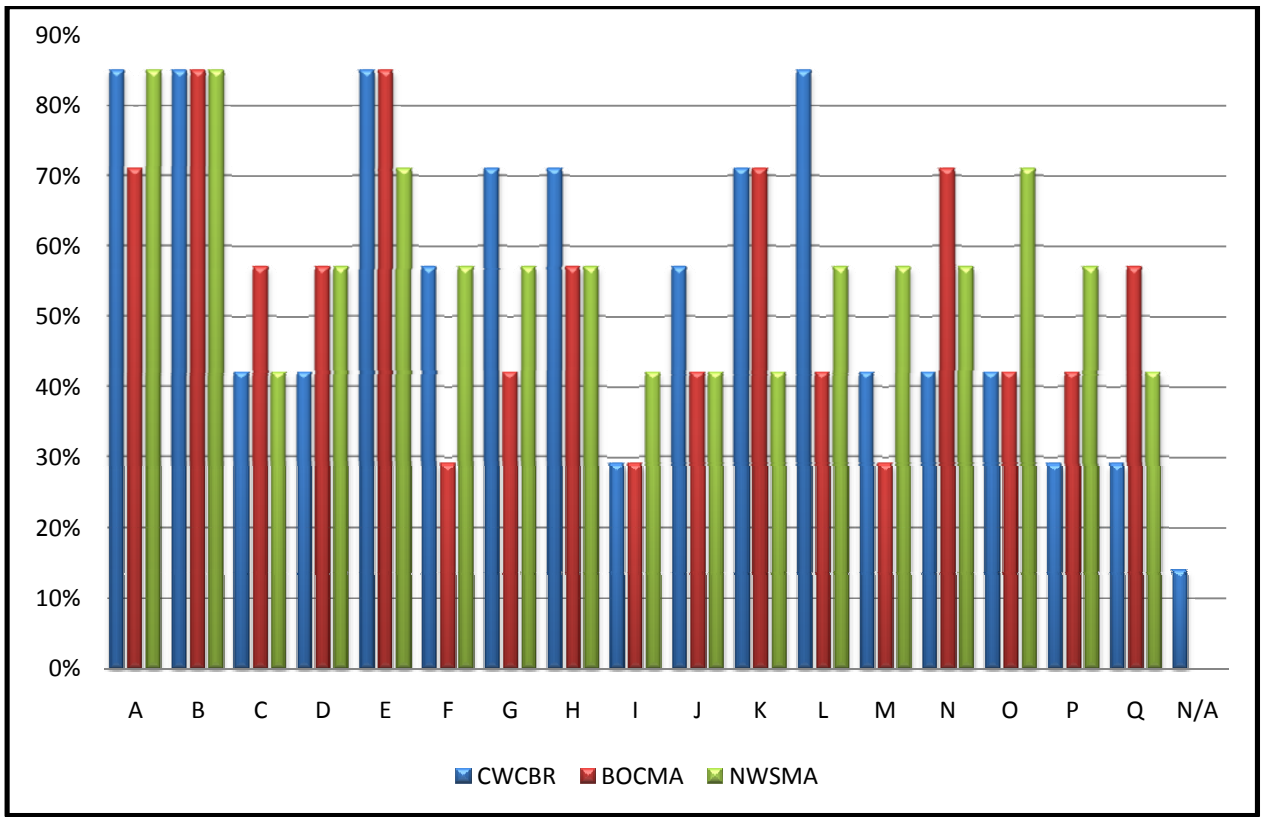

Figure 39: Policies of Government Used and Implemented

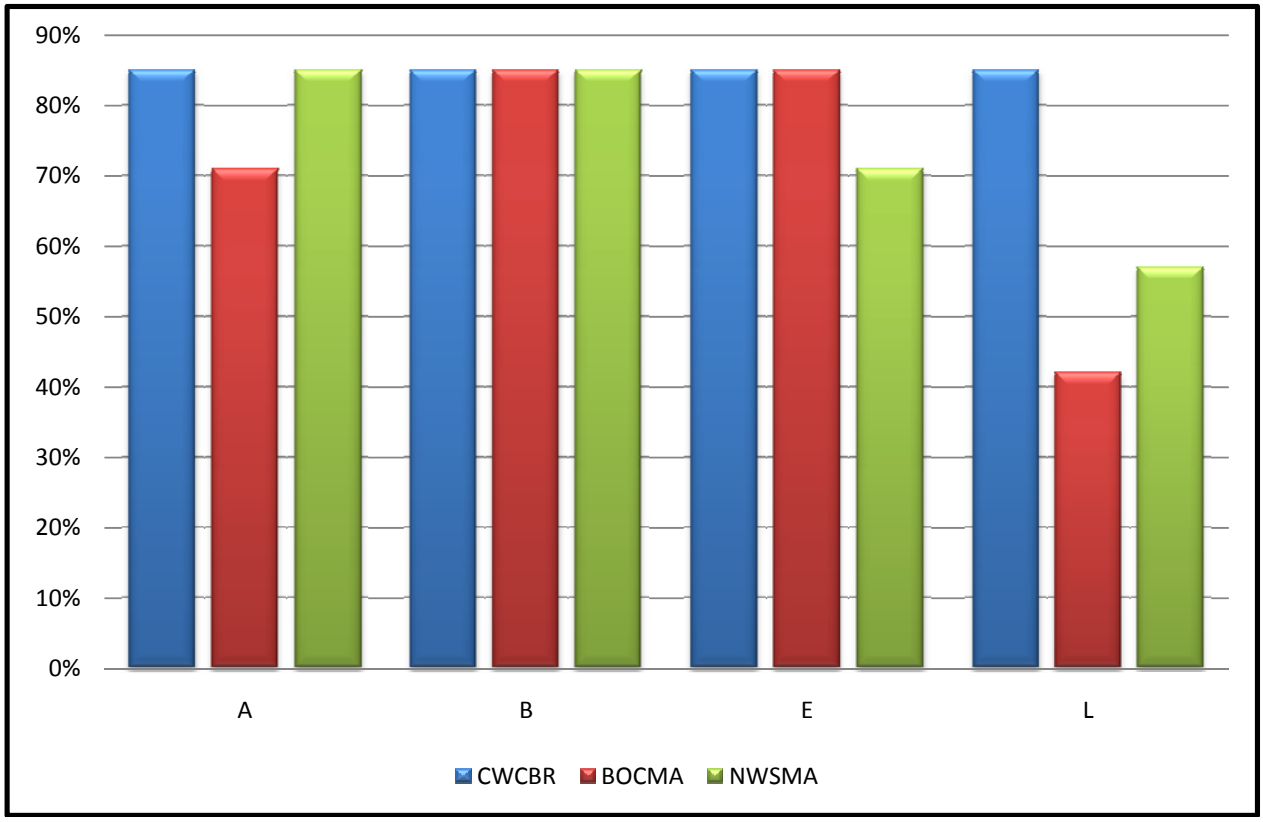

Figure 40: Policies of Government (a)

Government has focused extensively on creating environmental policies that are all-inclusive and all-encompassing. The most important legislation in South Africa is the Constitution of the Republic of South Africa (1996), more specifically for our purposes Section 24, which states that human beings have a right to a non-harmful and protected environment. The Constitution (1996) is the strongest legislative instrument in South Africa. Within the three conservation areas discussed here the Constitution (Section 24, 1996a) is the foremost law applied and adhered to. Closely followed, in order of importance are: the Environmental Conservation Act (1989); the National Environmental Management Act (NEMA) (Act 107 of 1998a); Integrated Development Plans (IDPs) – as seen in the graph, Government Policies (a). These policies have the highest rating amongst the conservation areas as being the foremost in importance and usage. They can be seen as the primary pieces of legislation that are followed.

Figure 42 shows the importance of policies for the specific resource management areas involved after the primary laws. These "secondary" laws include: National Water Act (Act 36 of 1998b); National Environmental Management: Protected Areas Act; National Environmental Management: Biodiversity Act (Act 10 of 2004); Green Paper on Conservation and Sustainable Use of South Africa's Biological Diversity (1996b); and the Green Paper on Environmental Policy for South Africa (1996c).

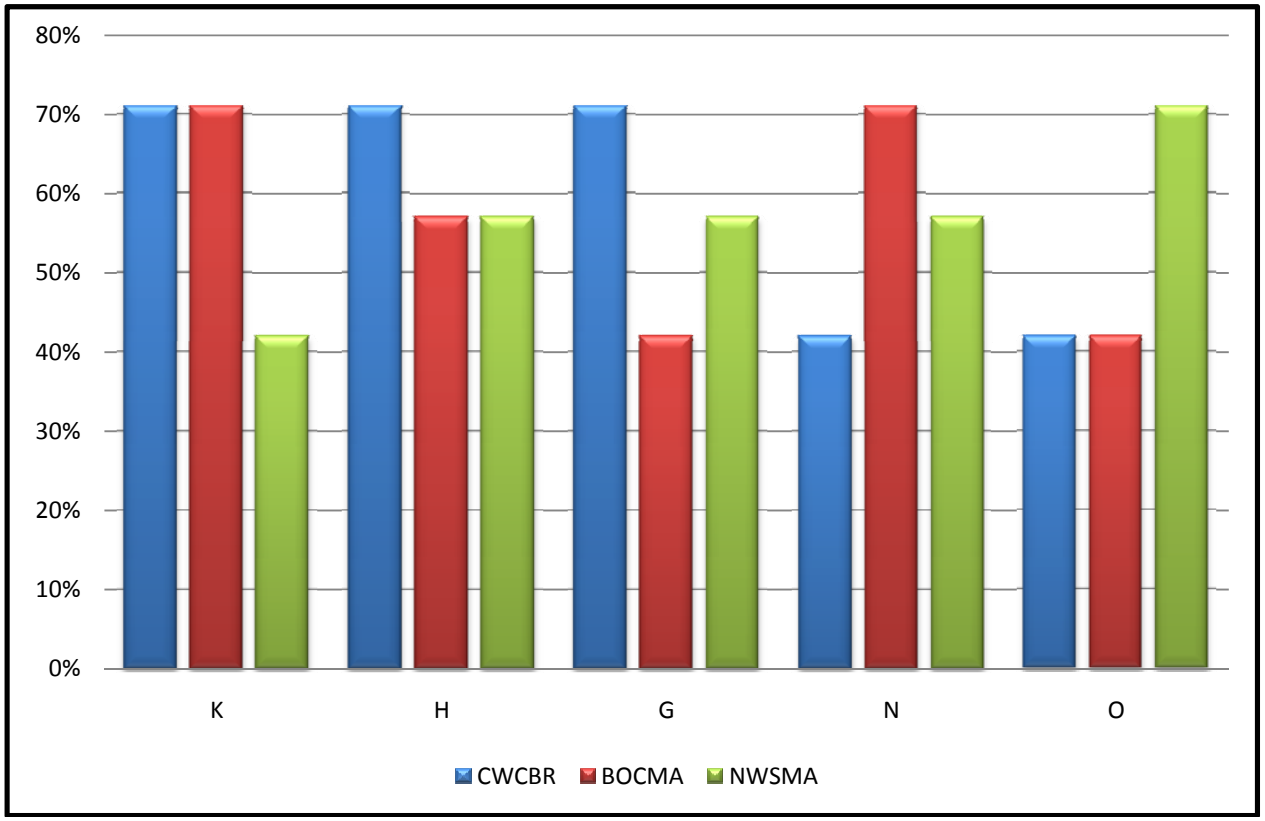

Figure 41: Policies of Government (b)

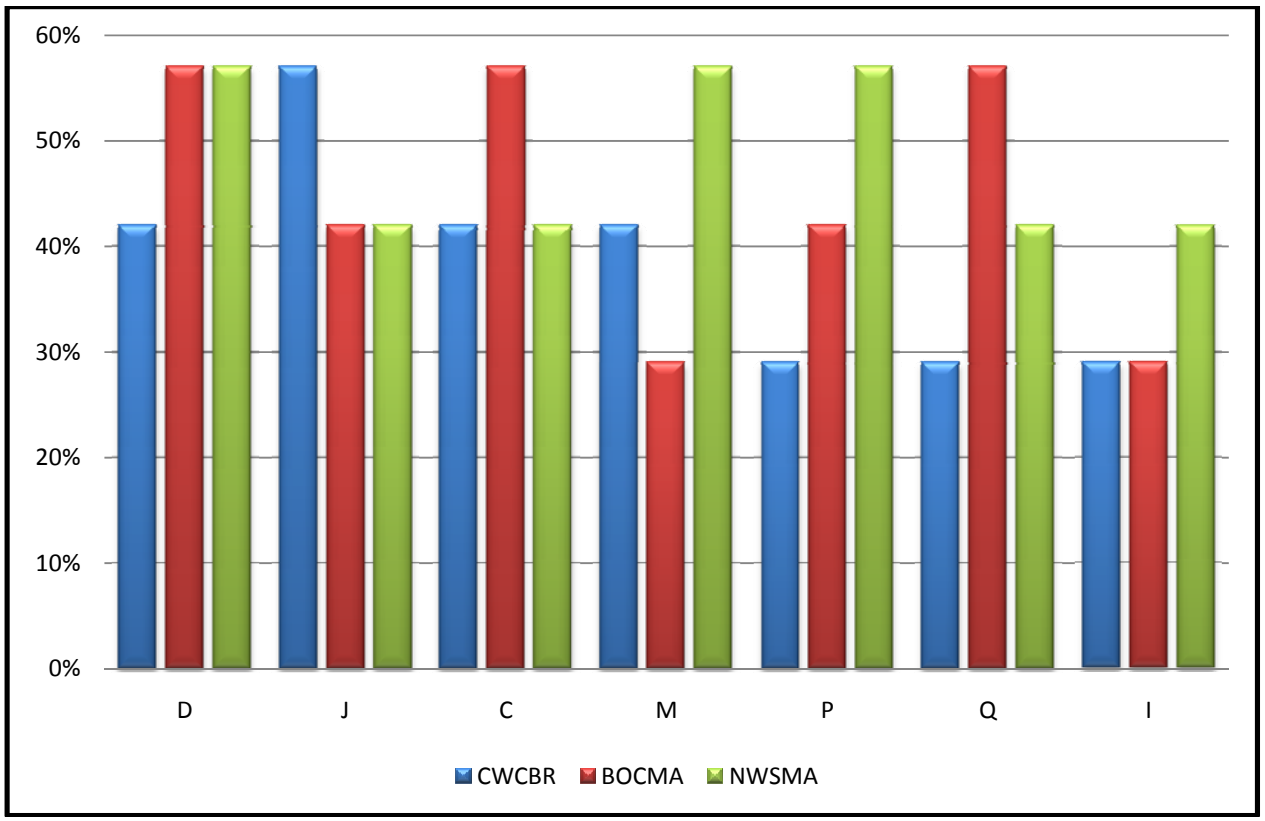

Figure 42: Policies of Government (c)

Figure 42 shows the laws which closely follow the secondary laws in terms of importance. These include: National Biodiversity Strategy and Action Plan (2003); Department of Provincial and Local Government: Strategic Plan (2007 - 2012); National Framework for Sustainable Development (2006); Environmental Implementation Plans (EIPs); White Paper on Environmental Management (1997); White Paper on Environmental Management Policy for South Africa (1998c); and finally, Strategic Plan for Environmental Sector (2008 - 2013). Environmental governance is only seen as effective if it leads to fair and sustainable management of ecosystems and conservation areas.

5.8.5. Active Involvement of Government Officials (Q15)

Building partnerships in conservation and management between government authorities and local actors is a constant challenge as the relationship is difficult in nature and problematical to maintain. As mentioned before in Chapter Three, the changes between the balance of power between government and local communities have had a deep-seated impact on quality regarding participation and mediation within conservation areas. Government departments rely mostly on government officials in conservation areas to ensure that legislative standards are being maintained and policies implemented so that government can effectively and correctly assess conservation areas to discover where improvements are mostly needed. Government officials are actively involved in the CWCBR to the extent of observing conservation and involved in the City of Cape Town. There are five municipalities incorporated into the environmental plans of the CWCBR: the City of Cape Town, Swartland, Saldanha, the Berg municipality and the West Coast district municipality. Government officials are only involved to a certain extent. On

the other hand, they can be perceived as being inactive as the conservation organisation is an NGO and therefore, governmental officials cannot make decisions which would change conservation mandates.

The BOCMA, being a statutory public organisation, has government officials with definitive involvement as employees. The board of directors had an active participating government official, who is now retired. Currently, there are no government officials actively involved and attending meetings. Yet, other participants stated that other government officials are also involved. The DWA representative is appointed and the vacancy exists only for a short duration after retirement of the previous official. Apart from the regional formal representative all meetings have been attended by DWA national office as well.

The NWSMA has a great deal of active government involvement, yet it is not consistent in terms of officials being actively involved. SANParks, being a statutory body, is actively involved within the NWSMA, but this mainly includes governmental department involvement as a whole and not government official involvement per se.

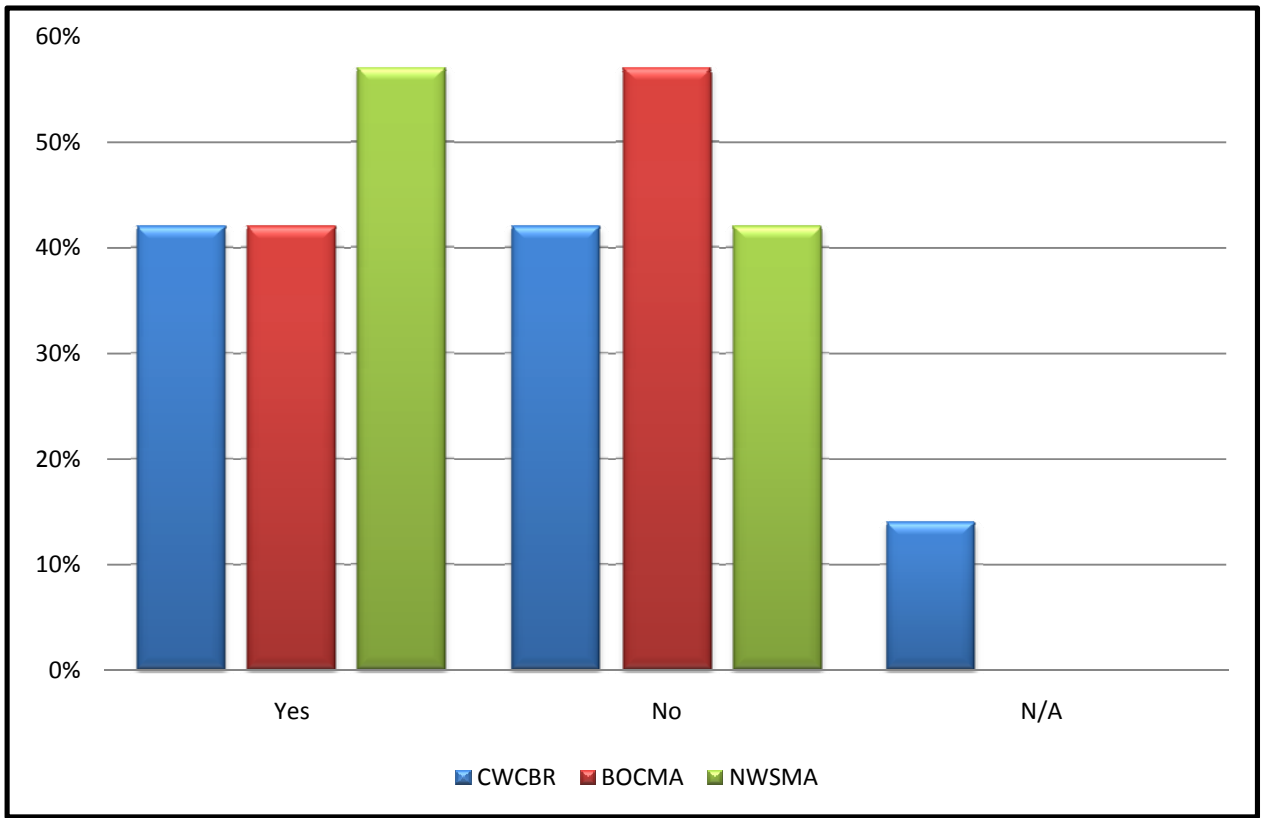

Figure 43: Active Involvement of Governmental Officials

5.8.6. Available Government Officials (Q16)

As the NWSMA is a private entity, and as no specific government official is part of the governing structure, there are definitely no available government officials.

The CWCBR does not rely on government officials to make decisions, yet when needed for certain actions in the conservation area, the government officials make themselves available. The government officials working within the biodiversity context have an excessive amount of work to do because, according to one survey respondent, crisis management is a highly common occurrence for the officials. Available governmental officials becoming involved can also be considered as unnecessary as the conservation organisation is an NGO, so for some conservationists who do not need to deal with government officials, this question was irrelevant.

The BOCMA has available governmental officials to consult in spite of the fact that they are not always present. This is not seen as a problem, because when they are needed to participate in conservation management decisions, they become actively involved. So for the time being there are not any permanently employed governmental officials. It is necessary to point out, with reference to Figure 44, that there is a significant difference between active involvement of government officials and their being available at all times.

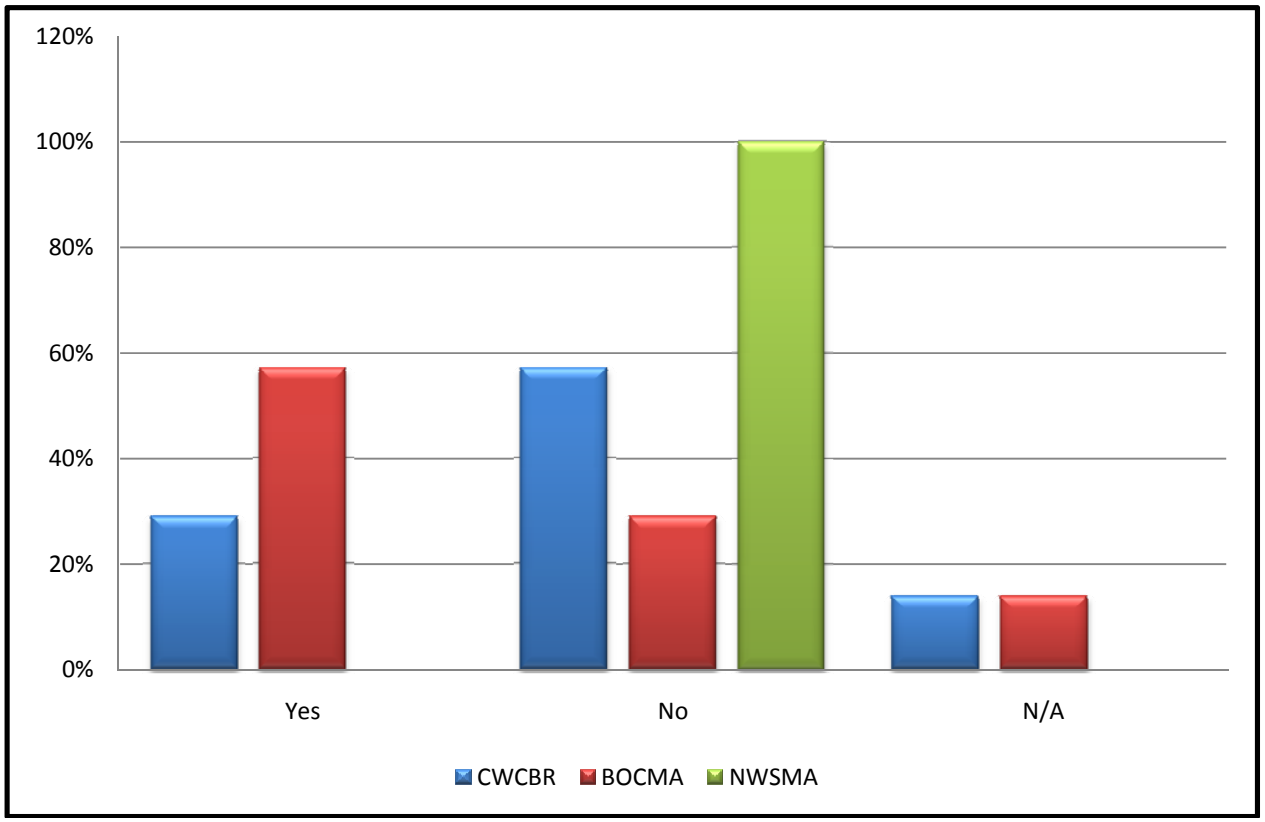

Figure 44: Available Governmental Officials

5.9. Stakeholder/Development Related Questions

5.9.1. Stakeholder Involvement (Q17)

Government is renowned for having majority control when it comes to environmental conservation management. A fundamental and significant aspect in favour of private organisations is that, unlike government in most instances, private organisations and NGOs have a wider range of resources available to them. These include financial resources, but also manpower, experience and expertise.

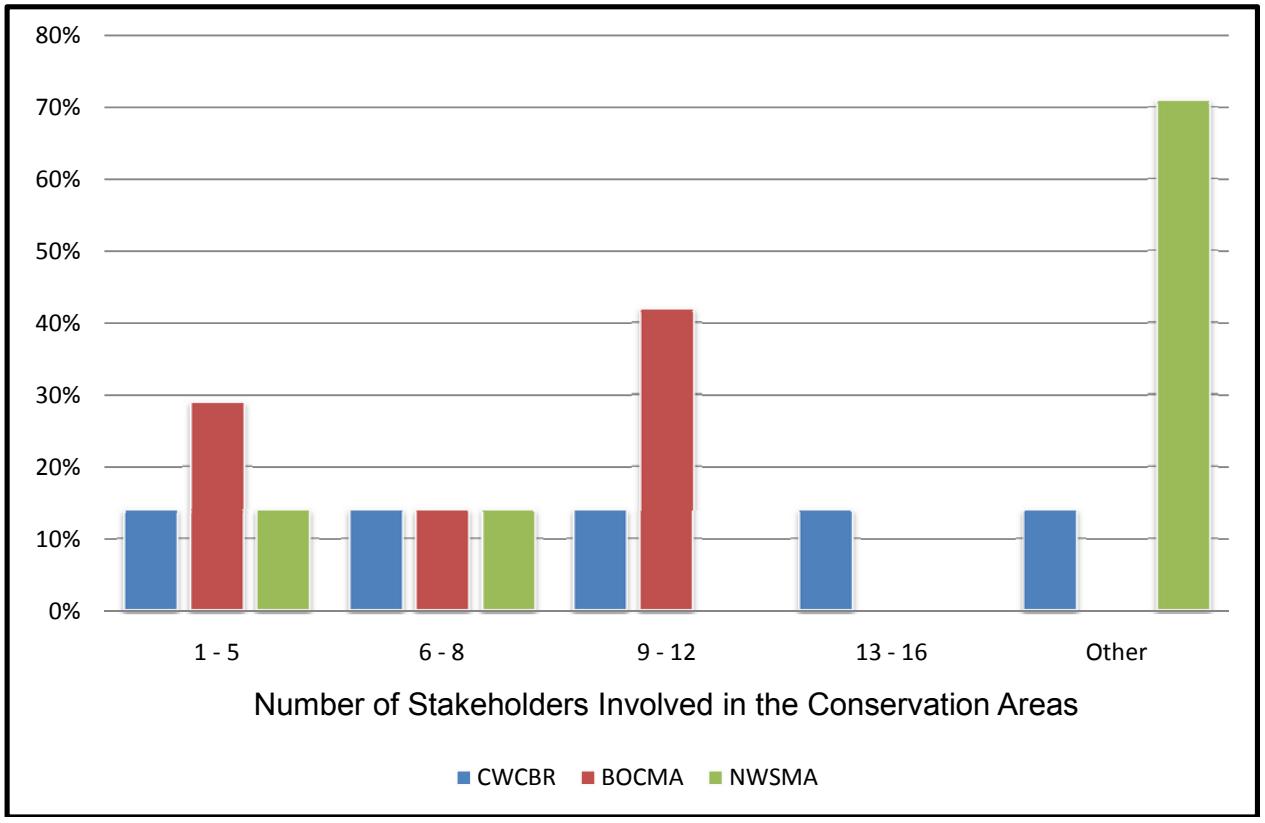

Figure 45: Number of Stakeholders involved in the Conservation areas

The BOCMA views the board of directors as stakeholders as each person on the board is individually selected by the Minister from the DWA from various stakeholder organisations. The board consists of twelve members, yet it was found that a more optimum number would be eight. Smaller boards are inclined to have more effective dynamics and decision-making procedures. The reason for this, according to one participant, is that the larger the board of directors is, the less organised it tends to be. This is not necessarily the case for the BOCMA, but is a common occurrence. Larger boards have a propensity to represent all the stakeholders, but in an unsuccessful, unorganised way. An additional significant role-player seen as a stakeholder within the BOCMA is the CEO of the organisation.

The CWCBR has a more diverse range of stakeholders totalling 24. This is because the number of stakeholders is constantly changing and evolving as projects are established or completed. Various stakeholders contribute constantly to the CWCBR. Education is imperative in stakeholder involvement as it generates

projects and funding as well contributing to knowledge about conservation and sustaining the environment. The DBSA (Development Bank of South Africa) has a specific stakeholder function, as do the WWF-SA and the Table Mountain Fund (TMF).

The NWSMA's stakeholders mainly consist of the independent farmers (23) who make up the LOA in the area. Other stakeholders include international parties which participate in the funding of projects. The German government donated €2 million through the UNDP towards the implementation of the programmes run by the SMA. The LOA represents the population within the area, which is roughly 3 450 people in the Village of Elim. Stakeholder involvement fills the gaps with resources desperately needed that the public enterprises fail to provide.

5.9.2. Growth and Progress of Stakeholders (Q18)

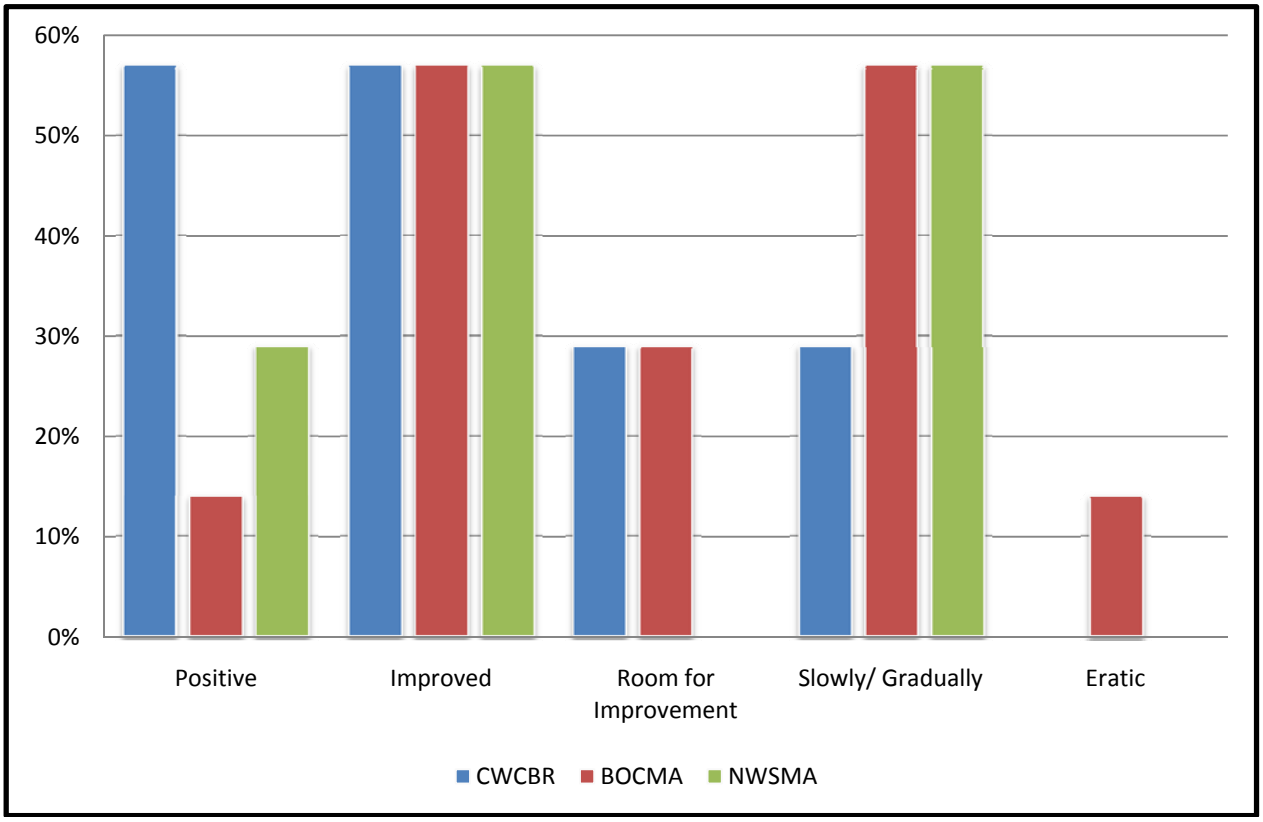

Figure 46: Involvement of Stakeholders over time

In order to consider the growth and progress of stakeholders, it is important to examine the difference between developed and developing countries and the stakeholders in each. The reason for this is that international stakeholders are well renowned to offer and provide aid to developing countries and organisations. For example, the NWSMA received funding from the German government. The communities in developed and developing countries – some which are the stakeholders – differ in terms of resource consumption. Developing countries have a propensity to maintain basic levels of sustainability, yet remain underdeveloped

because they do not have the necessary tools to maintain and increase the level of sustainability to become developed.

Stakeholders have grown and progressed rapidly over the years as they are more able to implement a bottom-up approach to conservation than public entities are. ENGOs have formed as the topic of conservation has increased awareness and concern. In the CWCBR stakeholder organisations have developed with promise as more stakeholders have been incorporated into the conservation area as it has developed. Stakeholders are now often approaching the CWCBR for advice and assistance. The relationship has definitely improved as more stakeholders are now available for conservation mandates as environmental management has become more popular. Small grants have been made available and land owners have been included. The basis is engagement with land owners to sign up contract nature reserves, thus creating multiple participatory partnerships and engagement with land owners. The development has also progressed from informal to formal, and gradual involvement has allowed for more stakeholders as more resources are made available. As with any organisation, the development of stakeholders still has room for improvement.

The BOCMA has found the involvement of stakeholders to have been erratic and has progressed slowly. Engagement has increased over the past few years, but the organisation is not completely established. It is necessary to establish and identify what needs to be achieved and how problems arise. Once this has been established, it can be identified which stakeholders on the board have already been appointed by the Minister of DWA, and whether it is necessary to include more as they are more needed. Yet, it was further found that an intensive involvement was maintained during the establishment phase and again with the development of the CMS. Governing board members are all appointed by the Minister. The board members represent all stakeholder groups and were nominated on behalf of the respective stakeholder groups after an intensive process of stakeholder involvement. All stakeholders involved or affected by water management (in practice everybody) is considered as stakeholders. No formal appointment process is required.

Stakeholder involvement and interaction have progressed gradually within the area of the NWSMA, but is now starting to increase and pick up speed in terms of capacity and expansion in terms of improvement. The motivation comes from two factors – need and threat. Need represents value, and threat represents fear and security. The land owners realised that the land holding conservation areas around them was under threat and that this needed to be addressed, which was how the LOA came about. The group is represented by individuals owning farms in the area. On the need side, the realisation grew that the conservation areas need to be protected since biodiversity was under threat. The understanding came about that biodiversity is a lifeline and natural resources had to be restored. Some stakeholders understand the concept of biodiversity conservation management better than others, hence the gradual engagement of the stakeholders, which is why the process has been gradual. The restrictions incorporated into the title deeds of the land owners protect certain areas of their land and commits them preserve to biodiversity. The land cornered off for the protection of biodiversity

and wildlife totals an estimated value of R450 million. As more facilities are offered and expanded in infrastructure, more stakeholders have become involved. It appears that stakeholders prefer to aid biodiversity conservation areas which have a higher endangered status, as well as conservation areas which attempt to help themselves first by taking action towards conservation and management.

5.9.3. Local Community Involvement (Q20)

In the history of South Africa local communities and their welfare generally did not feature in processes such as decision-making for managing natural resources. Therefore there was no need to develop the skills of local communities regarding the joint management of protected areas. As South Africa has developed over the past few years, conservation and its management has developed along with it. As awareness has been encouraged and promoted regarding environmental conservation within local communities, but greater involvement and participation have been desirable and warranted. The CWCBR set up a membership programme which encourages local community individuals to become a part of the conservation area, thus allowing individuals within the surrounding areas to become empowered as they then have a say in decisions made and in how the conservation area is run. Local communities have better knowledge of their surrounding areas than outsiders coming in to help run the conservation area. Local community members can also become involved through volunteer work and other relevant programmes in CapeNature. The CWCBR is currently seeking to expand its popularity through the social network tool *Facebook*. By encouraging a level of popularity in local communities, other individuals within the area will seek membership as well to be a part of the rapidly expanding popularity of the conservation area.

Local communities within and around the Worcester BOCMA region can become involved through awareness programmes, offering PPPs, by submitting proposals to councils for ideas on conservation protection and clearance. The local community can also phone a hotline to report any conservation problems they may notice. Local communities contribute in a positive way as everyone uses water, so all individuals are involved. Local communities can also contribute in a negative way as most people are polluters and waste water. All human beings leave carbon footprints. Environmental education is a key constant for local communities; learners are invited to reserves on educational outings. It is important to safeguard and protect the environment, and most often, local community members are the best people to consult.

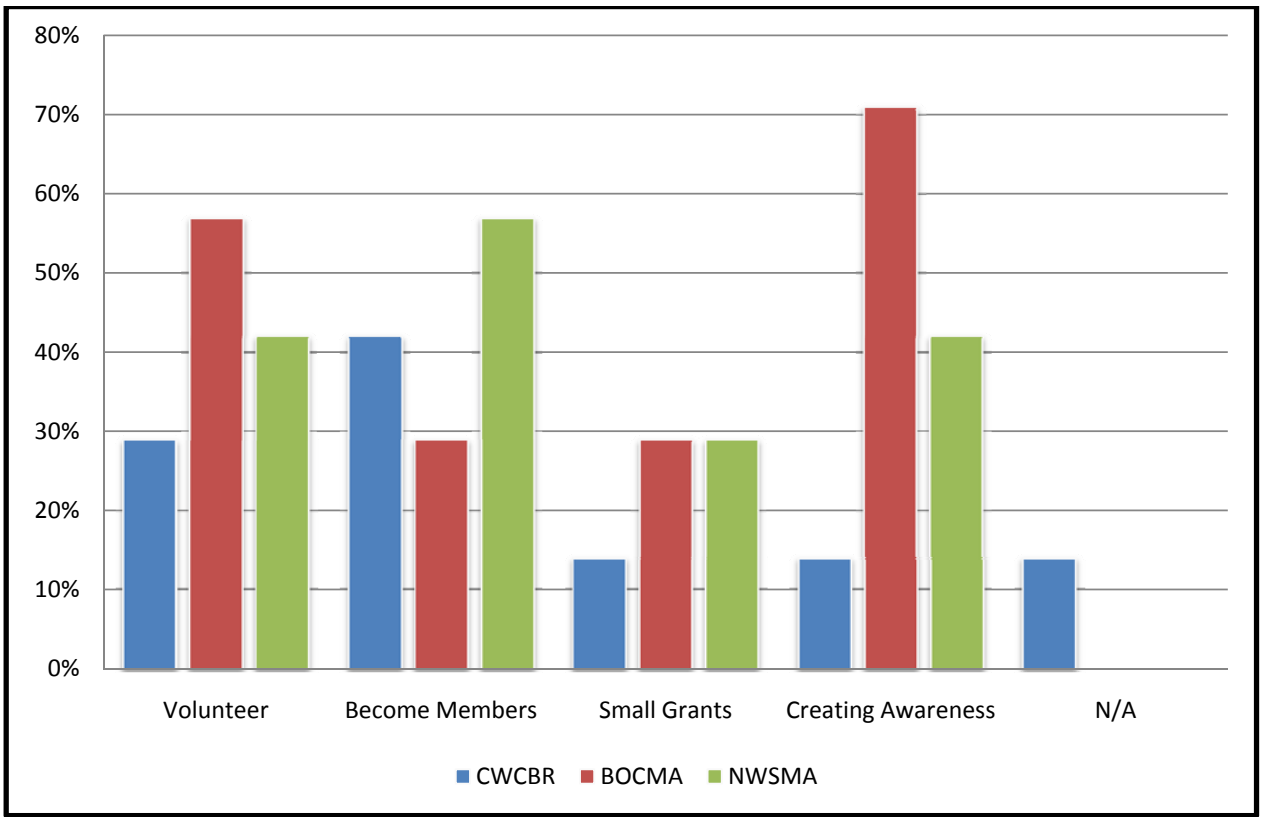

Figure 47: Involvement by Local Communities

The NWSMA is more difficult to become involved in as the LOA is selective – individuals have to own land to be part of the LOA. Despite this factor, local communities can still contribute through entrepreneurship and small businesses and by supporting locally produced produce. Each individual can contribute by reducing their carbon footprint and trying to keep the area free of pollution. By creating more awareness, the amount of knowledge individuals accumulate increases.

5.9.4. Non-Governmental Organisations (NGOs) (Q21)

Stakeholder involvement does not necessarily mean NGOs. According to Lane and Morrison (2006: 233), as mentioned in Chapter Two, NGOs refer to non-state or non-profit organisations, and mainly consist of volunteers whose main objective is to involve themselves in particular fields of interest. They include organisations such as charities and interest groups. The general consensus for NGO involvement within the three areas is that they are all involved, more so in the NWSMA and least in the BOCMA. On further inspection it was found that literally all the NGOs in the area were involved, especially environmental, women and previously disadvantaged group organisations. The CWCBR is a non-governmental organisation affiliated with a section 21 company, so there is some involvement from other NGOs, but not a significant degree. NGOs have grown and expanded in magnitude to such a extent that it can be stated that they meet the demands placed on the public sector by civil society where the public sector fails to deliver.

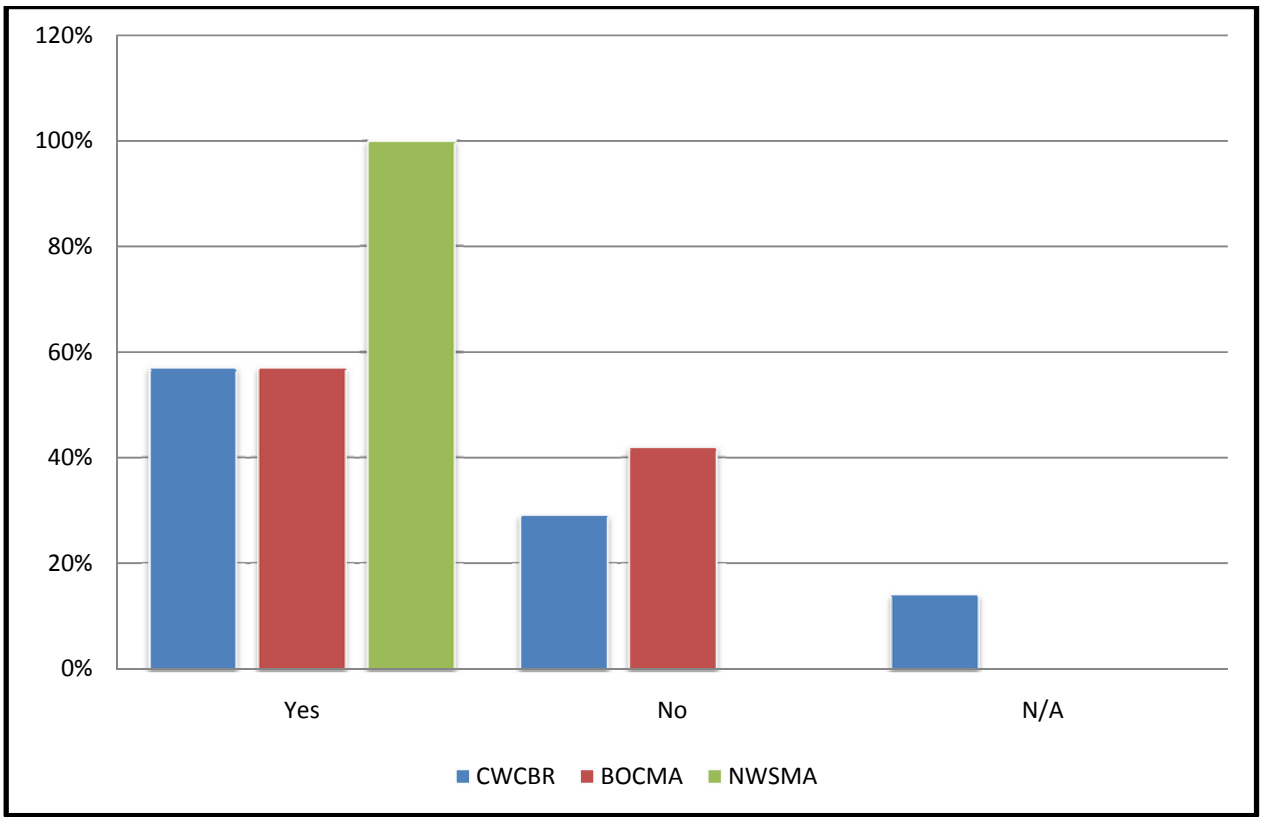

Figure 48: Non-governmental Organisations Involved

5.9.5. Stakeholder Cooperation (Q22)

It is essential for stakeholder involvement to be closely monitored and managed as a wide variety of stakeholders are involved. In order for constant active involvement by stakeholders to work, various management strategies need to be drawn up and implemented. By a process of elimination, the best possible management strategy can be established and utilised. But, as with all factors concerned, as the stakeholders evolve, so will the management practices to accommodate the evolutionary process of development within the conservation areas.

For the CWCBR it was found that meetings are the most successful for stakeholder involvement. Monthly board meetings which include technical advisors and representatives of key stakeholders are also held. Co-operation has been found to vary according to which projects stakeholders are involved. The BOCMA manages stakeholder involvement through the implementation of meetings and discussions, as well as by getting actively involved. Personnel participate in public meetings to discuss educating people about water as an added feature to the BOCMA schedule and list of priorities. Management is maintained through two major forums in the region. There are nine additional smaller forums. Mainly, and most importantly, the Department of Water Affairs has formulated policies and legislation for the area (CMA) that stipulate which types of stakeholders are needed for which types of projects. Stakeholder integration and management need to be carefully considered as the relationship is immensely complex. Most of the

basin management depends on broad stakeholder involvement. Meetings are the most important way of establishing effective communication and have a key role when dealing with co-operation and management of stakeholders. Regular news letters are sent to stakeholders and privy to be very popular and effective in dissemination of information.

As the NWSMA is a vehicle for facilitation, effective communication between the LOA members helps to formulate certain guidelines. Written documents provide the guidelines. Through management of participation by various stakeholders, the LOA can manage co-operation with the help of the written documents formulated for the area.

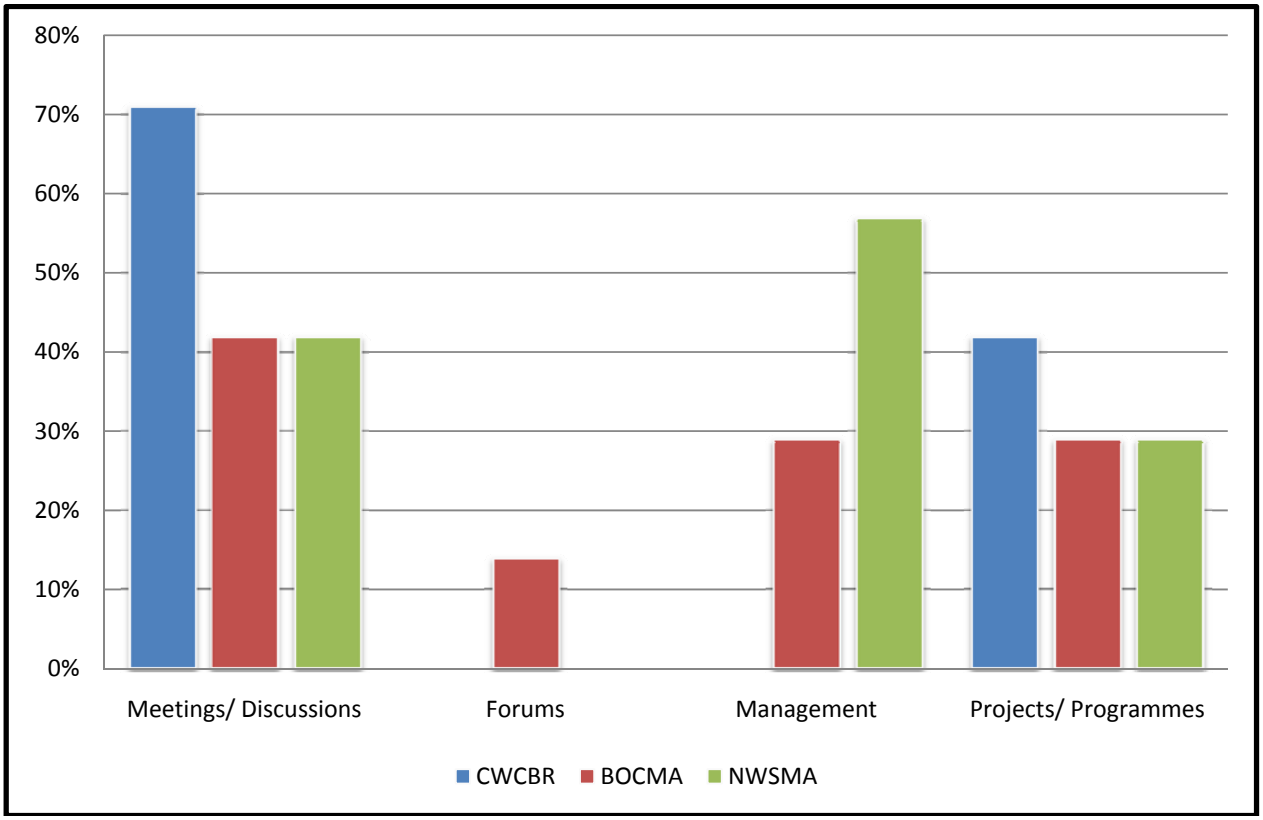

Figure 49: Management of co-operation between various stakeholders

5.9.6. Roles of Stakeholders (Q23)

Establishing levels of authority, or a hierarchy, is essential in any organisation and not only necessarily conservation groups, but the concept certainly applies to conservation management. By formulating a hierarchy, a chain of command and management is thus established. Board members are generally on the top of the list of authorities for deciding which stakeholders or role players can become involved. In some cases, because of constantly changing stakeholders and role players, the relationship does not last long. The levels of hierarchy in terms of making decisions regarding stakeholders' involvement and roles in the CWCBR are first the board of directors, followed by the chairperson, conservationists and governmental officials in terms of the legislation and policies formulated

specifically for stakeholder involvement. Government officials are involved as stakeholders because of their knowledge of policies and legislation.

The BOCMA shares power of decision making regarding the involvement of stakeholders and roles between the board of directors and government officials, with more power vested in the board of directors. Government has a strong influence over the CMA as a result of the Minister from the DWA overseeing the area. Legislation and policies set up specifically for the area dictate the criteria for stakeholder involvement. The rest of the decision-making process is directed towards the board to deal with.

The NWSMA as a private entity has the LOA to make decisions regarding which stakeholders can be involved. The LOA is regarded as the board of directors for the area. Decisions of a serious nature, such as stakeholder involvement, are made with careful consideration and extensive research as each stakeholder or role player has unique qualities and attributes to offer.

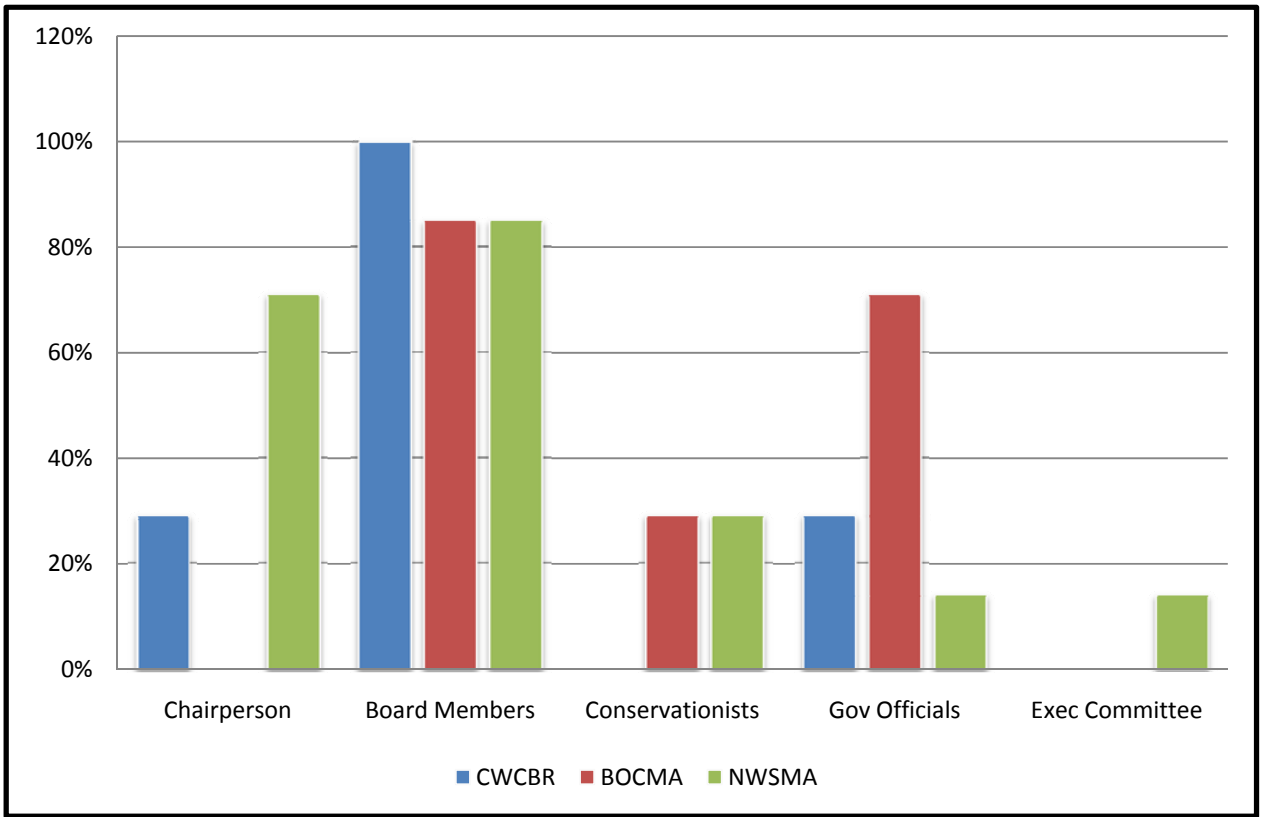

Figure 50: Roles and Positions of various Stakeholders

5.9.7. Positions of Stakeholders (Q24)

Regarding the previous graph, Figure 50, it is necessary to clarify the criteria the stakeholders are evaluated against. The graph also relates to the stakeholder co-

operation graph, Figure 49. The CWCBR mainly relies on appointment and general agreement or voting to incorporate stakeholders. Appointment is done through the process of deciding which stakeholder offers the highest selection of benefits or options for conservation, and then embarking on the process of contracting them. Top tiers of management generally decide on the appointments, but will accept recommendations from employees.

The BOCMA undertakes the process of nomination and appointment which is done by the board of directors. The CEO and staff ensure that all relevant stakeholder groups are involved. There are hundreds of stakeholder bodies identified by BOCMA and actively involved. The CMA is regarded as the most intensive stakeholder involvement bodies. The NWSMA, through the LOA board, decides which stakeholders are involved and what their roles are through appointment and general agreement. If general agreement cannot be reached, a vote is taken.

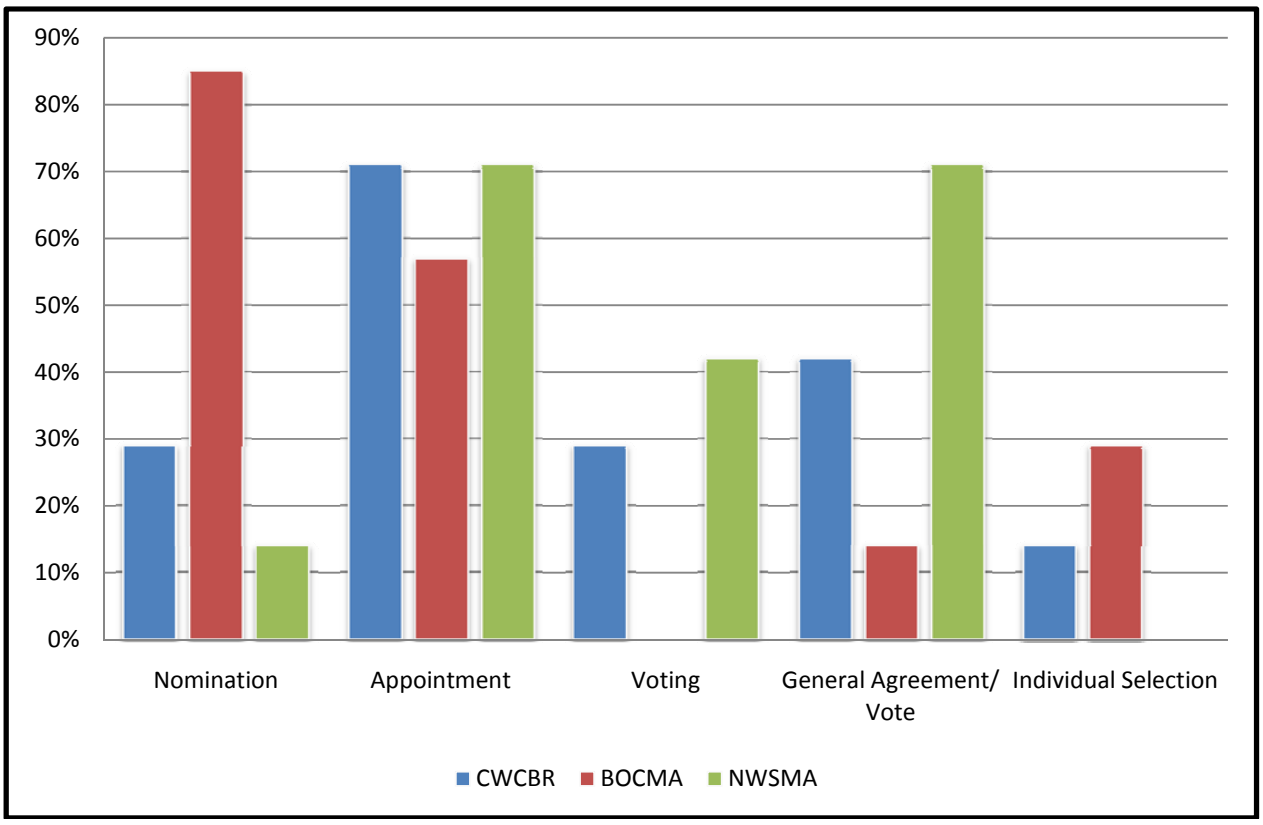

Figure 51: How Role-players and Stakeholders enter their positions

5.9.8. Information Exchange (Q30)

Communication is a key aspect and criterion for any organisation to work. Variance in communication occurs in every organisation as some companies need to communicate more often than others. The BOCMA, being a highly structured organisation in nature with formal settings, mainly convenes monthly meetings for information exchange. The Chairperson and CEO rely on weekly meetings to confer with each other, as the organisation and board function together but also separately. Within the executive section of the CMA, electronic networks and

memos are commonly used to confer with colleagues. The NWSMA holds quarterly official meetings, but the LOA members meet more regularly, sometimes having up to two or three meetings a day between several members at a time to discuss the activities within the area. Electronic networks and memoranda are also used.

The CWCBR relies on monthly meetings and electronic networks to consult fellow colleagues and to update the conservationists and members within the organisation about the current occurrences and events that take place within projects. Weekly meetings do not occur as each conservationist has his or her own projects to oversee, but if a problem arises then the weekly meetings are implemented until the problem is solved.

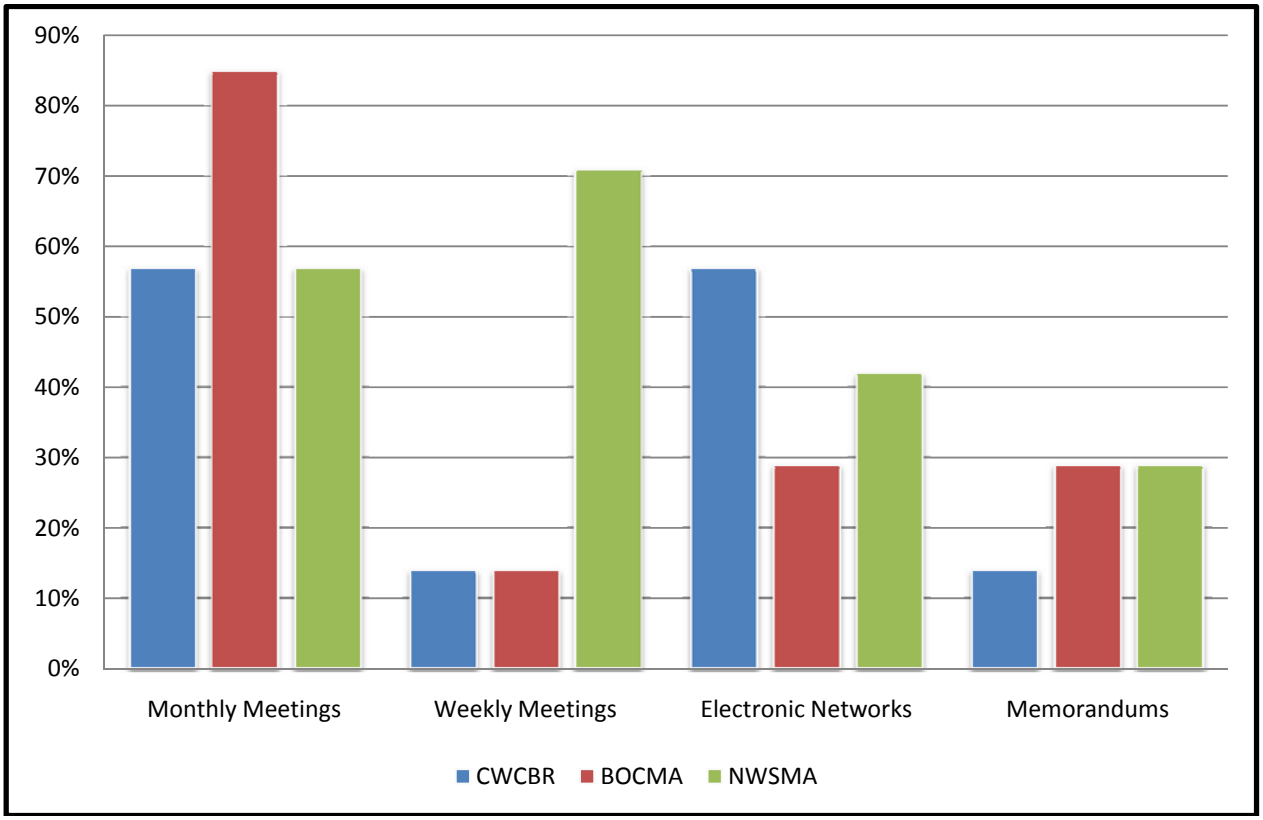

Figure 52: How information is exchanged and how often

5.9.9. Neglected Responsibility (Q35)

The CWCBR has experienced stakeholder neglect in that often stakeholders make promises they cannot deliver on. When stakeholders neglect their responsibilities, they place more pressure on government entities, such as SANParks, municipalities or government departments, to deliver what they promised in the first place without the help of outside stakeholders. The lack of coordination and the fragmentation can sometimes make service delivery very difficult, if not impossible, for all stakeholders involved.

The general consensus for the BOCMA and NWSMA is that stakeholders do not tend to neglect their responsibilities, although there is the possibility of participants not being completely honest in the survey. The NWSMA answered positively as well, but added that it all depends on the circumstances and which stakeholders are involved in which projects at the time.

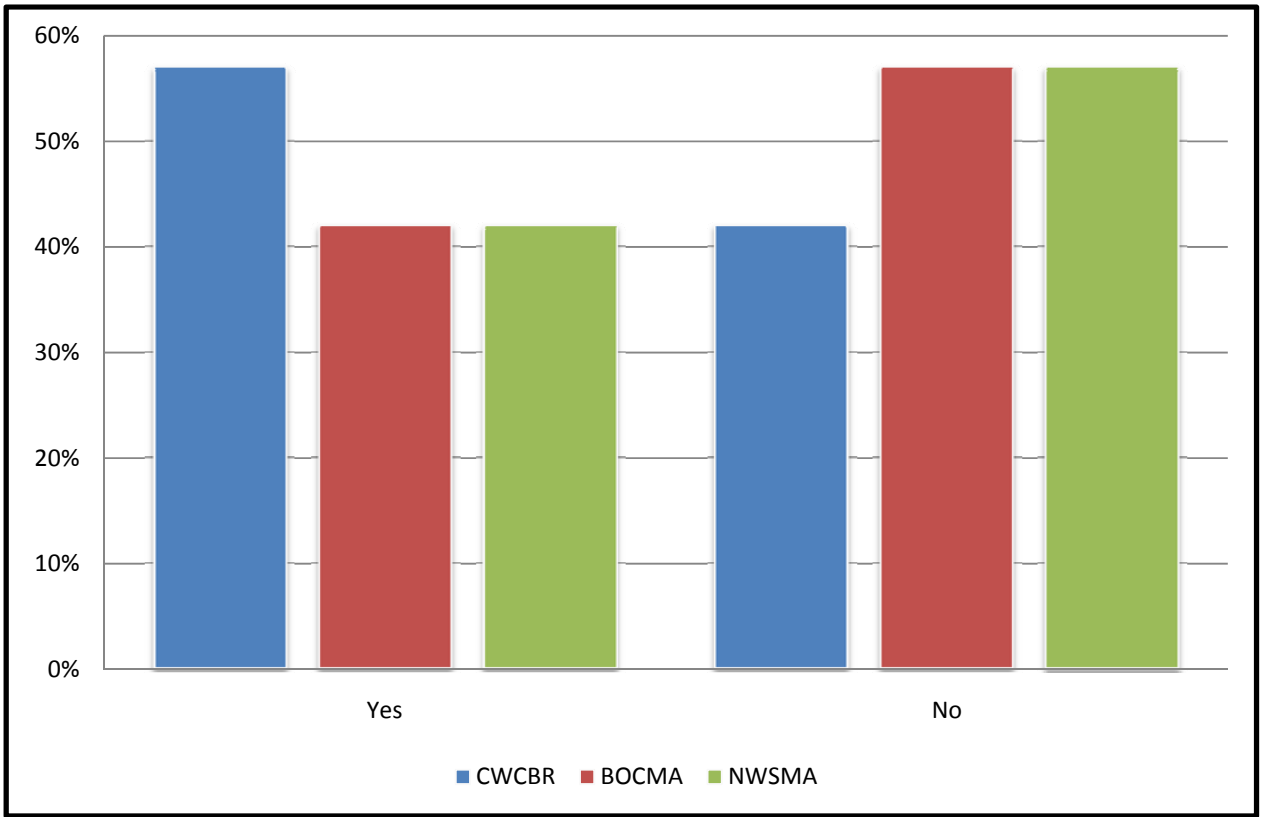

Figure 53: Neglected Responsibility by Stakeholders

5.10. Summary

The main objective of this chapter was to establish the current characteristics of the evolving collaborative governance of the conservation areas involved, and secondly, to establish the level of involvement of the various stakeholders concerned. As the conservation areas fall under the broad and extensive subject of environmental conservation and sustainable development, a comparison was made of the various management practices implemented within each area. As stakeholders play an extensive and widespread role within the contribution of various resources necessary for conservation protection and sustainable development, comprehensive research was performed establish their roles. Concerning governmental involvement and legislation, it was discovered that more widespread service delivery is needed within local community spheres. The public sector is required to assist in order for the relationship between the various stakeholders to develop, expand and to progress. A similar situation was discovered between the public and private sectors. Improvements are imperative if public-private partnerships are to succeed in a productive way.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS

6.1. Introduction

Awareness of the development and management of environmental conservation on a regional and local scale to facilitate the effective deployment of limited resources has increased over the last few years (Knight *et al.* 2007: 256). Conservational awareness continues to be a global-scale environmental responsibility for each and every individual. The research problems and objectives mentioned in Chapter One centre on land management, water management and biosphere reserve management. The objectives also focus on the assessment of the various stakeholders and their involvement, as well as on governmental participation.

The purpose of this study was to assess the organisational structures of the various managerial methods by assessing the various managerial systems put in place in the various conservation areas involved. It was also to assess the various levels of stakeholder involvement by assessing the levels of participation between the co-management areas and the stakeholders. A further purpose was to assess the various stakeholders, which include the South African government, various non-governmental organisations, and local surrounding communities. The aim was to identify the policies and legislation specified by the South African government regarding biodiversity and conservation management for the various conservation areas. This chapter will compare the research findings presented in Chapter Five with the literature survey of Chapters Two, Three and Four. General as well as specific recommendations will be made for each of the three conservation areas. The limitations of the study and suggestion for future research will be indicated, followed by some concluding remarks.

6.2. Discussion of Chapter 5 Research Findings

The problems described in Chapter Five mainly centred on involvement, availability and funding. A lack of resources, whether monetary or natural, poses a significant threat in each of the three conservation areas. These three conservation areas are the Cape West Coast Biosphere Reserve (CWCBR), the Breede-Overberg Catchment Management Agency/Area (BOCMA), and the Nuwejaars Wetlands Catchment Management Agency (NWSMA). This section discusses the research findings outlined in Chapter Five according to the framework for the assessment of environmental governance structures developed by Müller (2007a: 26).

Table 3: Research Findings Formulated around Müller's (2007a: 26) Framework of Environmental Governance Structures

Criteria	CWCBR	BOCMA	NWSMA
Scope	CWCBR Strategic Plan, vision, mission. UNESCO MAB guidelines.	Specific legislative mandate established by Minister of DWA.	NWSMA Initiative, Section 21 Company, vision, mission for area.
Position	Variety of international,	Stakeholder involvement	Variety of international

	national stakeholders. Stakeholders are interchangeable.	is stipulated by government acts stipulating which stakeholders are needed.	stakeholders, need more stakeholders. DBSA allocated funds.
Boundary	Loosely based structure. Board members gain position through voting and appointment by current members.	Board members are appointed by the Minister after nominations are received from stakeholder groups which make nominations under guidance of special independent Ministerial appointed advisory committee.	Need to be a land owner to be part of NWSMA. Buying land in designated area or selling.
Authority	Mainly evaluated by qualification. CWCBR encourages local people to become involved. Board has highest authority in CWCBR	Legislation stipulates allocated levels of involvement. Formal agreements between government and board indicate involvement allowed.	Qualification and stakeholder involvement. Members of LOA decide on involvement through general vote, or need for coordination.
Information and Knowledge Management	Mainly through formal monthly meetings and informal electronic networks occur daily. Formal annual reports and interpersonal communications.	Monthly and quarterly formal meetings. Formal information exchange through catchment management forums. Informal communication through electronic networks. Regular newsletters distributed.	Managed by formal meetings/discussions. Informal meetings 2-3 times daily. Formal biannual meetings. Informal communication includes electronic networks, written documents.
Decision Making	Decisions and meetings to highlight best possible solution; this is then voted on by board.	Democratic agreement, co-operation and open discussions in meetings with option of voting if general consensus not reached.	Board members of LOA make collective decisions through general agreements or voting if necessary.
Pluriformity	CWCBR operates on strategic level, best interest to produce effective coordination. Network structure loosely based, CWCBR should be treated as semi-autonomous organisation as relies on NGOs and stakeholders for funding.	BOCMA treated as single organisation; networks are integrated in centralised fashion as area is managed by Minister of DWA. Still in early phases of development.	NWSMA treated as single organisation as network structures have high level of integration and sustain effective coordination. NWSMA should be less privatised and more semi-autonomous.
Interdependence	High as networks are loosely coupled.	Low as networks tight and strict.	High, NWSMA closely interconnected.
Formality	Medium, gaps within	Medium regarding	High, stringent

	CWCBR are filled as organisation grows.	structure. High regarding legislation.	legislation followed.
Instruments	Strategic frameworks, legislation, provincial planning, frameworks from City of Cape Town, and MAB programme.	Catchment management strategy is initial function of BOCMA; legislation	Formal regulations, NWSMA Initiative, Section 21 Company, strict guidelines followed ensure effective coordination.
Leadership	Government officials actively involved only by observing conservation practices. CWCBR relies mainly on external stakeholders, not government leadership.	BOCMA is directly overseen by Minister of DWA. Clear commitment, leadership, participation and interaction from government officials	No clear government commitment as area is private. Linked to government through Agulhas National Park which borders the NWSMA.
Institutional Readiness	High, CWCBR actively encourages membership within local surrounding community. Knowledge and appreciation of missions of other members is evident as collaboration level is high.	High, BOCMA run by top tier of jurisdiction and stakeholder participation is positive. Colleagues consult with each other, keep up to date with goals, objectives and missions of other stakeholders and co-workers	Medium, stakeholders' participation only present when financially sponsored. Daily meetings between LOA members ensure knowledge of various projects, missions, goals and objectives of other members within LOA.
Redundancy	High, stakeholders sometimes promise service delivery, but fail to do so.	Low as operations are specifically delegated to certain stakeholders.	Low, do not outsource readily. Daily meetings further ensure low level.
Incoherence	Highly possible as CWCBR is NGO. Government has overlapping policies affecting the area.	Low, specific management strategies regarding water resource management set in place to reduce incoherence.	Medium, policies regarding land management overlap policies regarding wetlands preservation and management.
Lacunae	Medium, possible as stakeholders do not always deliver.	Low, BOCMA still new, operations have been successfully implemented.	Low, LOA discuss to achieve cooperative arrangements. Medium when outside stakeholders included.

Exploitation of the earth's natural resources over the past few decades has become extensive and if continued, may lead to species and genetic elimination, as well as to habitat and landscape deterioration. The main purpose of a biosphere reserve is to safeguard specific landscapes and the organisms which survive within them. At the same time, the purpose is to decrease the rapidly growing rate at which the human population is consuming natural resources, and instead to promote rational use of resources to decrease over-consumption. According to *Cape Biosphere* (2009), biosphere reserves have three basic functions: conservation, development and logistical support. Conservation is intended to protect the ecosystems, natural resources, landscapes, biological

abundance and the local culture. Development includes protecting social and economic progress, while at the same time inflicting little to no harm on natural resources. Logistical support includes education, permanent observation and investigation related to natural resources and the environment.

The CWCBR can be characterised as a loosely-coupled self-organising system. The reason it can be classified as such is because citizens and interest groups play a major role in the facilitation of programmes and projects. The scope within which the CWCBR operates is based upon UNESCO's Man and the Biosphere (MAB) programme guidelines, as well as the conservation area's own mission, goal and vision statements. The stakeholders and role players involved in the coordination of activities include international as well as national stakeholders. CAPE, WWF, Table Mountain Fund (TMF), UNESCO MAB, Critical Ecosystem Partnership Fund, and the City of Cape Town are the most prominent stakeholders in the CWCBR area. Specific individuals enter or leave their positions through appointment or a voting procedure by current members. These specific individuals include conservationists in the CWCBR, members on the board of directors, or stakeholders. The CWCBR can be described as a loosely-based structure as the conservation area is a proudly self-proclaimed apolitical area. The authority criterion of the CWCBR is mainly evaluated on the basis of the qualification of the individual in question. The conservation area is adamant on the topic of local community involvement, and the board actively encourages the participation of local surrounding communities. The board has been noted as having the highest level of authority within the CWCBR.

Information and knowledge management are dealt with mainly through monthly meetings and electronic networks. Formal meetings occur once a month. Electronic networks are a more informal method and exchanges occur on a daily basis between the employees. Interpersonal communication also takes place, as well as formal annual meetings and the reports of these annual meetings are distributed to the public who are part of the conservation area. The decision-making process is mainly regulated by discussions and meetings through which the best possible solution is selected to be implemented. The primary objective of this procedure of decision making is to make collective decisions while resolving conflicts regarding management and resources.

It is in the CWCBR's best interests to operate on a strategic level in order to produce effective coordination. The CWCBR should be treated as a semi-autonomous organisation as the conservation area is NGO-based and relies on not-for-profit organisations, government agencies and private organisations for funding. The networks are loosely integrated as this is in the best interests of the conservation area, and as a result produces effective coordination. The balance between conservation and development needs to be closely monitored and maintained so that the one factor does not overwhelm the other. The interactions and interdepartmental relationship, as well as the relationship between employees, can be categorised as having high interdependence as the individuals within the CWCBR rely on each other for information and assistance, rendering them closely interconnected. The level of formality is categorised as medium as the conservation organisation ranges between formality and informality. As the

organisation grows, the positions available will be filled and the organisation has the possibility of becoming completely formal or maintaining its level of medium formality. The instruments used by the CWCBR consist of legal frameworks, strategic frameworks, UNESCO's MAB programme and provincial planning frameworks from the City of Cape Town. The latter is used because the CWCBR falls under the jurisdiction of the municipality of the City of Cape Town. These instruments facilitate effective coordination.

In relation to the leadership structures in the CWCBR, government officials are actively involved within the conservation area, but only to the extent of observing conservation practices. The City of Cape Town municipality plays a role within the CWCBR, because – as mentioned above – the CWCBR falls under the City of Cape Town's jurisdiction. The CWCBR mainly relies on external stakeholders for guidance and support, and not on governmental leadership structures. Institutional readiness within the CWCBR can be classified as high as the conservation area actively encourages members in the local surrounding communities to become active members of the CWCBR. As the City of Cape Town municipality is a stakeholder in the conservation area, existing institutions have been found to be readily available for regional governance. Knowledge and appreciation of the missions of other participants is clearly evident as the level of collaboration is high. Redundancy was established as being high, as stakeholders have been found to promise service delivery yet fail to do so. This factor in turn results in an overlapping of functions performed within the conservation organisation. It was discovered that coordinating projects became problematic if stakeholders failed to deliver their promises.

Incoherence was determined as being highly possible as the CWCBR was established as a NGO. Government policies were found to overlap for the area, yet not in an extreme, dramatic or irresolvable manner. The final key point in the framework, lacunae, was established as being on a medium level as the possibility of stakeholders failing to deliver is always present. The CWCBR's board of directors has several conservation projects running concurrently in order to prevent a ripple effect as a consequence of failed service delivery. If one stakeholder fails to deliver promised resources or services, this would not cause major setbacks for the conservation area.

According to the DWA (2010), a catchment can be described as a basic geographical unit of water quality management. It is necessary that water quality management at a catchment scale integrates characteristics such as land use effects along with the physical characteristics of the catchment. This includes external factors such as economics, in order to manage water quality. These factors have boundaries which are different from those of the catchment boundaries. Successful water quality management relies on integrating these diverse factors into a holistic managerial system with the main aim being continuous improvement of water quality management over time (DWA 2010).

Sherwill *et al*. (2007: 505) discuss the concepts of stakeholder connectedness and participatory water resource management within the context of South Africa by mentioning that in order to achieve a truly bottom-up approach, participatory management is dependent on the initiatives of the lower levels of the managerial hierarchy. Catchment management agencies cannot directly engage every individual stakeholder, even though CMAs are required to take on the responsibility of engaging resource users within their allocated water management area. The main purpose of the BOCMA with regards to partnership is to decentralise management and to enable stakeholder participation on a catchment scale (BOCMA 2011: 33). The BOCMA is required to balance policy imperatives from the Minister of Water Affairs, local institutions, stakeholders and water users. Cooperative management relationships are established between these role players.

The BOCMA can be characterised as a closely-interconnected single organisation. The reason for this is that the conservation area is managed by a stringent hierarchy. The organisation is self-reliant as it is a governmental organisation and does not rely on outside stakeholders to function with the exception of outsourcing specific projects. The Minister oversees and instructs which stakeholders and which projects are outsourced. The scope of the conservation area includes a specific legislative mandate established by the Minister of Water Affairs, and the organisation falls into the category of a public organisation as it is government orientated and developed by government. Stakeholders and role-players are not fixed entities within the BOCMA, and their involvement is stipulated by government papers and legislation, which indicate which specific stakeholders are to be included for a specific project. For the most part projects are handled by individuals within the BOCMA organisation itself.

Members in BOCMA gain their positions through the direct appointment by the Minister of Water Affairs. These nominations are then given to the Minister, who then takes the nominations into consideration and implements the steps to appoint members. The authority structure in the BOCMA organisation is specified by legislation which indicates allocated levels of involvement. Formal agreements between government officials and the board of directors, also called the governing body, indicate the allowed involvement. Information and knowledge management are dealt with through monthly and quarterly formal meetings and informal electronic networks on a daily basis. The Minister of Water Affairs communicates with the BOCMA through formal catchment management forums. Yet it was found that the board members are appointed by the Minister after nominations is received from stakeholder groups. The Minister does not communicate with the BOCMA through formal catchment management forums. The catchment management forums are groups arranged by BOCMA in the area and the way BOCMA communicates with the stakeholders. The Minister communicates with BOCMA through departmental representatives.

Decision-making within the BOCMA is handled through democratic agreement, cooperation and open discussions in meetings, with the option of voting if general consensus cannot be reached. General consensus is the objective of each meeting, as it is necessary for successful collaboration and coordination within the

organisation. The BOCMA is treated as a single organisation as the networks are integrated in a centralised way as the Minister of Water Affairs is in the top management of the area. The organisation's developmental phase can be described as young, as the organisation is still relatively new. It can therefore be noted that, so far, the BOCMA mainly has a three-tier structure comprised of the Minister of Water Affairs, the board of directors and the CEO of the BOCMA organisation. Networks within the BOCMA organisation can be described as tight and strict, thus interdependence between different entities is indicated as being low. As the organisation is relatively small, the network is closely interconnected. Formality within the BOCMA organisation is medium, with a tendency to shift to low at times, yet only when with respect to the structure. Regarding legislation, the organisation has extremely high levels of formality with variance in formality levels. The instruments and incentives used by the BOCMA organisation include stringent adherence to legislation and a catchment management strategy, of which the draft was released in February 2011. The catchment management agency characterises and sets out the initial functions and proposed goals of the BOCMA.

Leadership within the BOCMA organisation is a clearly defined hierarchy. The CMA is directly overseen by the Minister of Water Affairs. This also includes clear commitment, leadership, partnership and active interaction from government officials representing the Minister in the CMA. Institutional readiness of the BOCMA organisation has been proven to be high as the CMA is run by the top tier of government jurisdiction – being the Minister of the Department of Water Affairs – and stakeholder involvement and participation has been demonstrated as positive. As the area is relatively new, fellow colleagues within the organisation are consulted with new and improved ideas, and at the same time are kept up to date with goals, objectives and missions of other role-players within the organisation. Redundancy within the BOCMA organisation can be classified as low as operations are specifically delegated to certain stakeholders chosen by the Minister of Water Affairs. By personally overseeing the outsourcing the certain projects within the BOCMA, the levels of redundancy are reduced. As the organisation grows in capacity, this factor might change. The incoherence regarding policies with different goals and requirements affecting the CMA has been shown to be low. This is because there are specific management strategies regarding water resource management set in place to reduce incoherence. Lacunae within the area can be depicted as low due to the organisation being relatively new. This results in operations being successfully implemented and cooperative arrangement has thus far worked because the organisation is small.

According to Turner *et al*. (2003: 99), many managed wetlands-based organisations are highly complex in nature and often poorly understood as hierarchically organised systems. Turner *et al.* (2003: 115) further mention that a key component to resolve the existing failures is behavioural change on a local level. Increased public awareness is gained simultaneously with increased scientific knowledge of wetland ecosystems and their benefits to society. This type of communication can only be achieved successfully if the difference in worldviews between the local people and scientists is taken into account. Existing stakeholder structures, existing local ecological knowledge and local institutional arrangements for maintaining wetland ecosystems should get special attention (Turner *et al.* 2003: 115). Various stakeholders within the NWSMA have the ultimate responsibility for the success of the conservation area. The main stakeholders include the relevant land owners (Dennis Moss Partnership 2005:

132). To ensure the long-term success of the SMA, the involvement and commitment of all stakeholders is imperative. A fundamental requirement of the SMA is to enable all stakeholders to participate in the management in a meaningful way, as well as to build the capacity to participate, negotiate and perform various important tasks.

In the NWSMA, in accordance with table 3 above, the scope includes international, national, provincial, regional and local levels of policy documents and developmental planning. The NWSMA Initiative and the Section 21 Company formulated by the Land Owners Association (LOA) are the most relevant. The NWSMA consists mainly of a variety of international stakeholders. The Development Bank of South Africa (DBSA) made funds available for the NWSMA Initiative, yet the need for more stakeholders for funding purposes has become apparent. The boundary of the conservation area depicts that it is a necessary requirement to be a land owner to become a part of the NWSMA, thus specific individuals can take up a position by buying land within the specific designated boundaries of the NWSMA. The authority criterion is mainly based upon the qualifications of individuals and already-active stakeholder involvement. Members of the LOA decide on the involvement of individuals – or lack thereof. This decision is made through a general vote as this satisfies the need for coordination within the LOA.

Information and knowledge exchange is managed through meetings and discussions, both formal and informal. Informal meetings can range between being held once a week to two to three times a day. Formal consultations occur through biannual meetings. Other means of communication include electronic networks, as well as by means of written documents and other effective communication strategies. Board members of the LOA make collective decisions through general agreement, or if necessary, voting can occur. The NWSMA should be treated as a single organisation as the network structure set in place maintains a high level of integration and sustains effective communication between the various individuals. As a whole, the NWSMA should attempt to be less privatised and be more semi-autonomous in an attempt to incorporate more stakeholders in order to create more effective coordination as a whole as an ultimate goal. Interdependence within the NWSMA's LOA may be classified as high. This is because the NWSMA is closely interconnected as the LOA is a private entity. Thus interdependency between members within the LOA is high. Formality can also be classified as high in the NWSMA which leads to effective coordination between members of the LOA.

The instruments used within the NWSMA consist of formal regulations. The conservation managers draw on specific legislation in the form of the NWSMA Initiative which provides strict guidelines for effective coordination between the members within the LOA. There are no clear indications of active government commitment and leadership within the area. This is because the area is completely privatised, within the exception of its being linked to the South African government through conservation legislation and through the NWSMA's affiliation with the Agulhas National Park, which acts as a buffer zone for the NWSMA as the two conservation areas share boundary lines. Institutional readiness within the NWSMA may be categorised as medium as stakeholder participation is available

only when the NWSMA is financially sponsored for a specific conservation project. Citizens in the local surrounding communities cannot gain access to the NWSMA without permission. Thus involvement is less than what it could be and knowledge of the NWSMA is limited and scarce. Daily informal meetings between the various members of the LOA ensure that knowledge of their various projects, the mission, goals and objectives of other members within the LOA is constantly being shared.

Redundancy within the conservation can be described as low because the area is private and the LOA members do not outsource projects readily. Daily meetings between the members of the LOA further act to ensure low levels of redundancy within the area. Incoherence in the NWSMA is on a medium level as policies regarding land management overlap with those policies on wetlands preservation management. Lacunae can be classified as low within the NWSMA. It is deemed as low in terms of the LOA discussing and negotiating on matters to achieve cooperative arrangements. Lacunae could also be described here as medium as soon as outside stakeholders are included. At present they are not included in the daily meetings held by the various members of the LOA.

6.3. General Solutions for Environmental Conservation

Environmental management strategies have become a necessary requirement for governments and multinational corporations to incorporate into their policies and plans. Pro-environmental constituencies and proactive environmental management are two concepts which have become well-known and keenly advocated through public pressure on governments worldwide to ensure a cleaner environment for all (Buttel and Flinn 1976: 477; Berry and Rondinelli 1998: 38). According to Balkau (2005: 429), solutions for environmental problems which are applied inconsistently are as detrimental, if not more so, than no solutions applied at all. In the long run, inconsistently applied solutions damage the ecosystem and environmental conservation area. The restoration of ecological and wetlands systems has become increasingly popular and substantial amounts of money have been transferred into these restoration projects annually. It is necessary to reconsider the objectives of environmental programmes as they have become so costly. Environmental professionals now have a variety of methodologies, instruments and techniques available to implement to achieve environmental solutions and innovative solution frameworks (Balkau 2005: 403 – 4).

According to Balkau (2005: 422), the world can be viewed as a global machine of finance, services, trade, information and even culture. The dynamics of environmental action is shaped by the interaction and interplay of these forces. Berry and Rondinelli (1998: 38) define environmental sustainability as “the need to protect the environment and conserve natural resources” but they add that environmental policies can potentially also seriously obstruct the economic development in the more disadvantaged nations –third world countries.

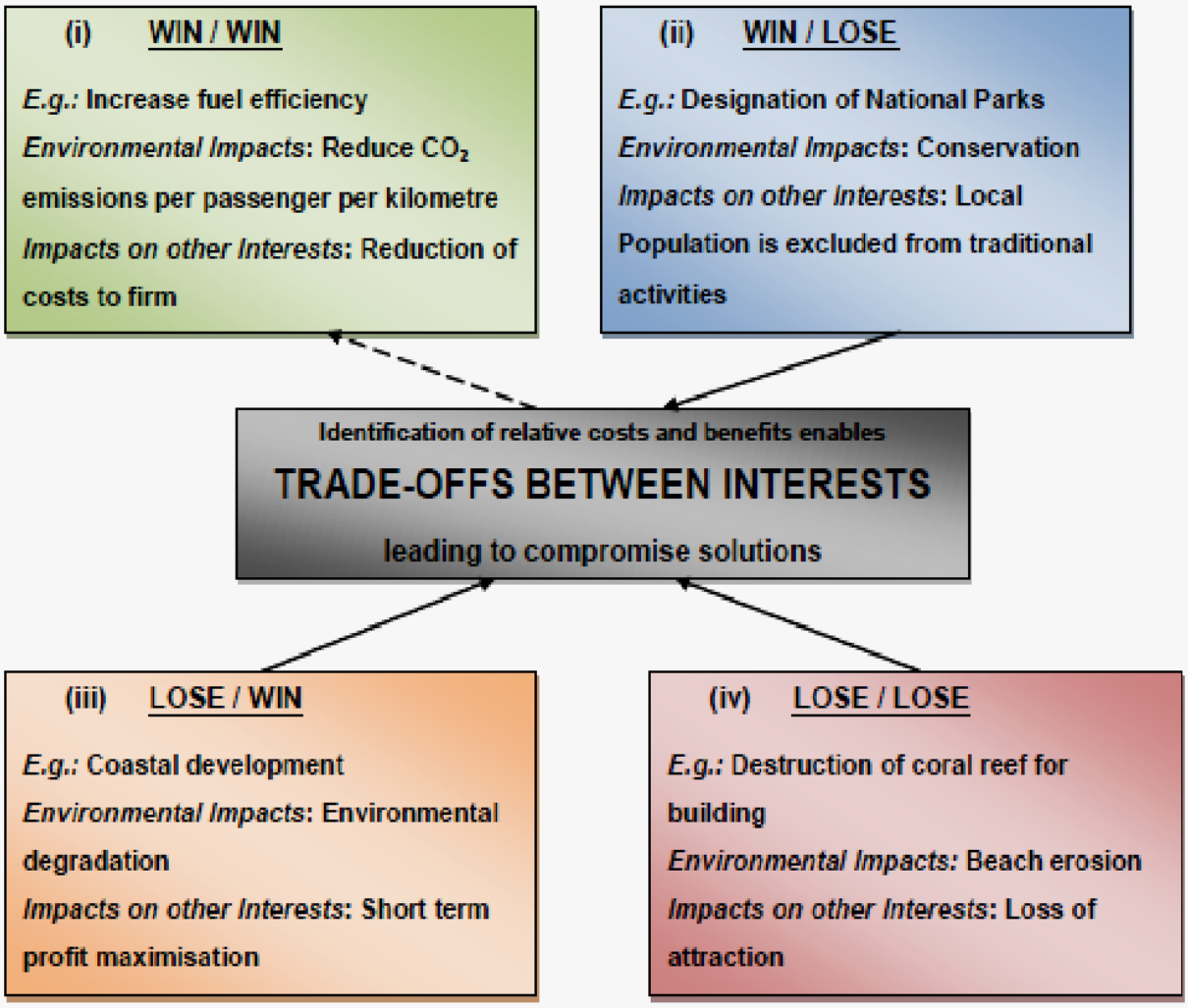

Figure 54: Mixed outcomes for the environment and development with trade-offs between interests to achieve a more sustainable outcome (derived from Cater 1995: 22; 27)

Sustainable tourism, according to Cater (1995: 21) and Jenkins and Henry (1982: 452), is a sector which can probably go beyond most other sectors, levels and interests. Without adequate protection for the environmental sector, development could be undermined, thus creating a gap in development on a general basis. Cater (1995: 21) discusses four categories of various interests of sustainable tourism: firstly, the host population; secondly, the tourist guests; thirdly, the tourism organisations; and lastly, the natural environment. These four categories have mutually-reinforcing aims towards ensuring sustainable tourism development. The first category includes centring the prime interests and needs of the host population on the terms of improved standards of living over the long and the short term. The second category includes fulfilling the potential for enhanced standards of living by continuing to attract international tourists, who are necessary to bring foreign currency into the country. The third category indicates that by creating successful tourism organisations, including the public and private sector, it will be possible to generate increased foreign exchange earnings, increased tax revenues, increased commercial and business revenues, increased profits and employment. The final and most essential category, dealing with the environment,

stipulates that unless the environment is safeguarded, tourism could potentially become a self-destructive process. In other words, if tourism is conducted incorrectly and inconsistently, this could destroy the very resources it is based upon (Cater 1995: 22).

It can thus be stated that protecting the environment is an essential aspect to tourism and that all the major role players have a stake in sustainable tourism. A completely sustainable outcome is more ideological than reality allows; four scenarios created by Cater (1995: 22 – 25) are a reflection of the relative strengths and weaknesses as well as a balance between development and environmental interests. Figure 54 shows examples of mixed outcomes for the environment and development, as well as the need for trade-offs between interests to achieve more sustainable outcomes.

The win-win scenario depicted in figure 54 is an example of collaboration between environment and development that results in positive outcomes for both sectors, while also leading to environmental improvements as well as the promotion of income growth at the same time. Trade-offs will have to occur to achieve the most sustainable outcome, yet it is unlikely that the outcome will be optimal from either the environmentalist's or the developmentalist's point of view. What has often been noted with trade-offs and compromises in any environmental negotiation is that short-term benefits to one interested party often results in long-term losses for the other parties involved. In developing countries such as South Africa the national economic concern is with increasing income from foreign currency or exchange earnings and reducing the balance of payments deficits in the short run than sustaining the environment in the long run. Cater (1995: 72) mentions that more complete accounting and auditing practices should include environmental considerations. Berry and Rondinelli (1998: 45) further build on this idea by stating that participatory decision-making and implementation, along with monitoring, auditing and reporting, should include various constituencies comprising of environmental components. This idea is depicted in Figure 55 below.

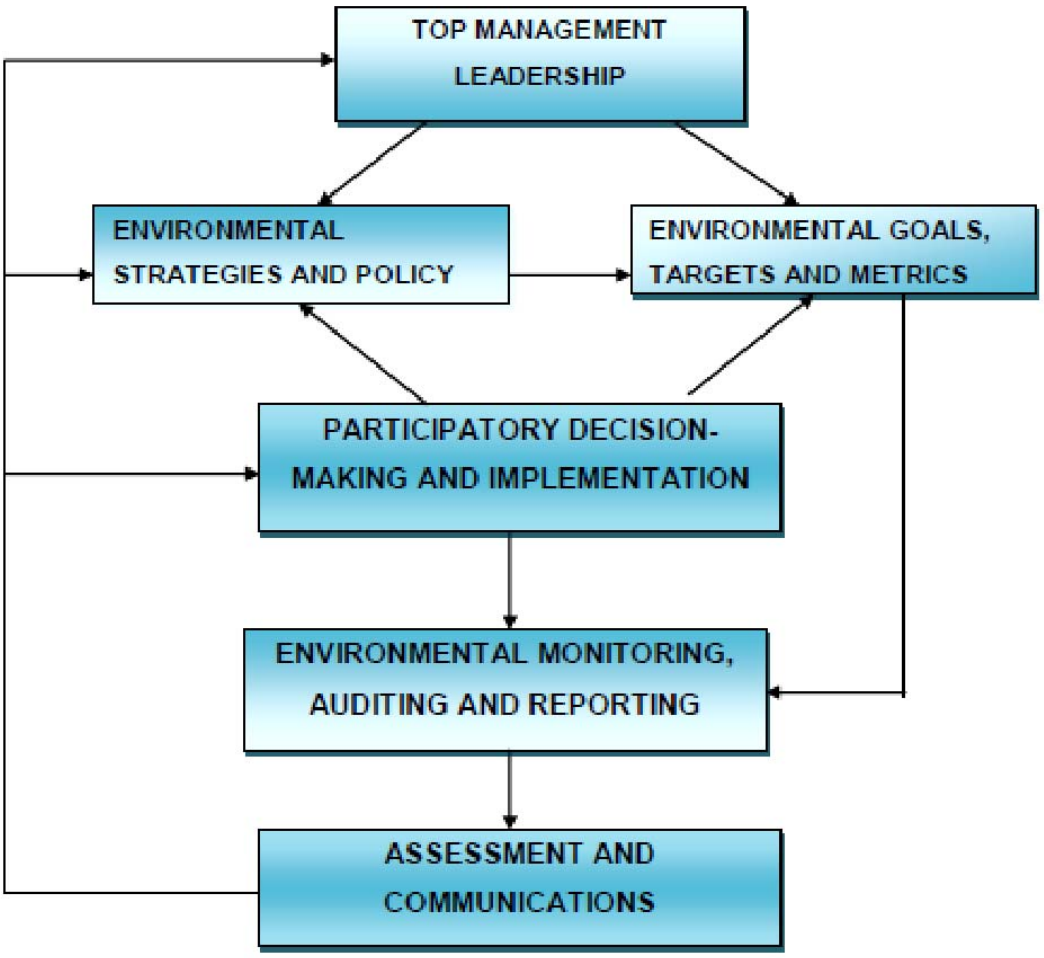

Figure 55: Elements of Proactive Environmental Performance (Berry and Rondinelli 1998: 45)

Environmental solutions, while ranging between vast numbers of options, continue to be based upon a small number of concepts. These solutions have shown to be surprisingly similar across sectors and regions (Balkau 2005: 404) and are synthesised in different ways, often displaying a high degree of synergy. Selin and Chavez (1994: 13) discuss a similar concept regarding environmental solutions, mentioning that while agencies with a focus on natural resource management adjust to an environment of rapid economic, ecological and social change, they are also experimenting with a range of new concepts and tools. Economic interdependencies are becoming more pronounced while environmental managers are discovering that collaborative blueprints can be used and implemented, and also that they are powerful tools to resolve conflict, while at the same time advancing a shared vision of how resources should be managed. Collaboration can be an effective tool when used in the correct context and can be an operational strategy for appealing to the public's sense of social responsibility regarding the distribution of natural resources (Selin and Chavez 1994: 14). Hall (1999: 286) states that unless there are clear indications of an attempt to provide equal access to all stakeholders involved, collaboration will be noted as just one more approach in the dictionary of tourism planning clichés. Partnerships, collaboration and coordination are the foremost solutions to problems centring on tourism, the environment, development and resource management.

Chase *et al*. (2000: 216) echo Hall (1999: 286) in their opinion about collaboration and co-management in that Chase *et al.* (2000: 21) mention that co-management requires substantial input regarding resources, time and effort. Co-management has the substantial possibility of promoting greater stakeholder investment and satisfaction with management. Wildlife conservation, according to Chase *et al.* (2000: 246), entails wisely managing the shared responsibility for the conservation area with stakeholders. Co-management, according to Carlsson and Berkes (2005: 74), is the logical approach to solving resource management problems through partnerships with various stakeholders, and even creating public-private partnerships (PPPs). Joint decision-making is necessary for co-management between a coherent state and community by implementing a power-sharing arrangement. Power sharing will typically be regarded as the end result of a collaborative problem-solving process when co-management between state and community is implemented.

What has become increasingly clear throughout this research is that no one stakeholder can be expected to achieve the best possible results within conservation management without co-management and collaboration with other stakeholders. It is also important to include stakeholders their involvement in infrastructure projects overlaps several spheres of influence such as economics, marketing, sociology, engineering and demographic areas (El-Gohary *et al*. 2006: 604). In order to bring about a sustainable relationship between the various stakeholders involved in environmental conservation, it is necessary to create new institutions. These new institutions will entail re-organisation of governments and organisations in civil society, new legislation and policies, and especially new partnerships between organisations. An example of such reinvention would be to organise government departments so that overarching sectors such as environmental conservation, social services and economic development can be coordinated (Brown 2002: 15).

The conditions of the South African environmental sector are constantly changing and evolving. Unless a conservation area can succeed in the face of unlimited change, no matter how large or dynamic the conservation area is, it will not survive (Hannah *et al.* 2002: 267). Biodiversity and conservation in a rapidly changing world, according to Pressey *et al.* (2007:590), involve dealing with three broad challenges. The first challenge is that biodiversity and its processes will always need constant attention. Secondly, regardless of whether threats are considered or not, most planning situations include dynamic threats. It is the steps taken towards addressing these threats that are important with regards to sustainability and effective conservation. Thirdly, conservation and its management are presented with the challenge of keeping up to date with science with regards to systematic methods, decision support and the role of software in analysis. The same can be said for environmental scientists in that they should take on additional roles delegated to conservation stakeholders. These additional roles include ensuring transparency, long-term collaboration and communicating more effectively. This can in turn promote effective implementation.

Challenges facing conservation areas, as noted in Chapters Four and Five, include sustainable living, conserving biodiversity, involving local communities, stakeholder participation, funding with economic support, collaboration, cooperation and ineffective management practices.

As not all conservation areas are the same, the solutions applicable to each specific conservation area will differ in terms of methodology, application and implementation, as well as in the results achieved from the solutions implemented. However, it would not take a detailed scientific or economic study to indicate that over-exploitation and degradation carry a detrimental cost to future generations, while at the same time affecting present benefits. Management and planning measures are required in each conservation area to maintain productivity and functioning. Yet different conservation areas need to be maintained to maximise the different types of benefits as the level of intensity for conservation management differs per area (Turpie *et al.* 2002: 202).

The DWA (2010) states that "sustainability, equity and efficiency are recognised as the central guiding principles in the protection, use, development, conservation, management and control of water resources." This statement can be applied to any natural resource and is applicable to conservation areas. Management is an integral aspect of conservation areas and it is essential to carry it out in an integrated way in order to achieve holistic participation and collaboration. Participatory management, transparency and openness need to underlie decision-making processes in order to achieve sustainable environmental conservation areas. While recognising that natural resources are finite, scarce and unevenly distributed and need to be managed in an integral and participatory manner, it is important to further recognise that each individual's life is affected, as well as the rate of development and progress.

As the world's population increases each day, the surface area of the world is metaphorically decreasing in terms of liveable areas and areas available for conservation. According to Rabie (2005: 96), the focus on conservation areas should no longer be restricted to viewing protected areas from their boundaries inwards, but rather the focus should be from the boundaries outwards. This is because conservation areas form part of the regional landscape. The internationally recognised optimal amount of conservation area consists of 10% of the land within any given country, but according to Rabie (2005: 96), this is seldom reached. One option to create more awareness in an already environmentally-conscious society is through education and training. By educating society from a young age to conserve the environment in every small way possible – such as minimising their own carbon footprint, not leaving taps to run and recycling – each individual can develop into adulthood with an environmental consciousness. Personal education and knowledge are probably the most essential components in environmental conservation and management in the long run. A number of conservation areas offer a wide range of environmentally educational outings for school learners. These activities include camps, and conservationists talking to the learners about the importance of the environment. By educating disadvantaged communities and stressing the significance of each

individual leaving a carbon footprint, it is then left up to each individual's to decide how minimal or extensive their carbon footprint is going to be.

Regarding education and understanding of conservation areas, the conservation areas have the option of having educational centres for school groups to learn about fauna and flora, and to provide a hands-on experience. Another option is to have an individual from the conservation area go to schools to promote the area's education benefits by increasing learning and awareness of the area. The conservationist can give presentations at schools in the form of slide shows or videos compiled for the benefit of the conservation area. This in turn supports ecotourism in the form of school outings by promoting education courses and increasing knowledge of the conservation area – especially for lesser-known areas. Educational learning facilities can generate income as well as create jobs. The conservation area can employ conservationists, teachers for the education centre, geologists, botanists and biologists. The conservation area can promote the protection of the environment in educational tour groups, promote recycling, and create awareness of the consequences of detrimental environmental practices.

A viable solution for a conservation area would be to create a newsletter, distributed on a monthly or quarterly basis. Environmentally aware organisations sponsoring conservation areas want to know where their money is going and what it is being spent on. With the option of a newsletter, the business organisations can be kept up to date on the plans and projects in the conservation area, while at the same time receiving free advertising as the conservation area can put the sponsoring organisations' logos on the newsletters. Advertising to international donors can also be achieved through the newsletters. In order to be environmentally-friendly and cost effective, the newsletters can be sent out through an electronic network. Stakeholders can encourage people of local communities to become involved and offer communal projects to work on. The newsletter ties in with education in that the conservation area can send the newsletter to schools.

A core problem often found in conservation areas is funding, or the lack thereof. Funding is an imperative issue to address as most managerial systems rely on funds to be able to run and work effectively. Conservation projects cannot be implemented or sustained without monetary compensation. Once funding is made available, many more conservation projects become accessible and available to implement. Many international stakeholders have invested in conservation projects as environmental wellbeing affects everyone. These international stakeholders include parties such as the World Bank, UNDP, UNESCO, WWF and international governments allocating tax revenue for conservation projects. When this research was conducted, it was discovered that opinions were enthusiastically given on what can be done in terms of improving funding. Yet it was found that the process for implementing these ideas was not always forthcoming. For the most part, funding is a high priority on any conservation area's agenda, as it should be. For the conservation areas whose funding is not primarily provided by the country's national government, it is imperative that the conservation area creates additional environmental projects in order to attract the attentions and interest of

international governments and stakeholders. By creating awareness in local communities around the conservation areas, communities can become knowledgeable about the conservation area and become involved. Local communities thus make a difference to their surrounding environment, even if the difference is not monetary in nature.

The private sector should be regarded as a highly desirable stakeholder for any conservation area as it is able to provide the services that governments often promise with the full intention of delivering these services, yet are unable to deliver the services either partially or completely. The most favourable option in this aspect is a balance between these options, thus including both the public and the private sectors by creating PPPs. Stakeholder involvement, as mentioned in Chapter Two, has become an increasingly popular solution in the past few years. The most successful relationships in PPPs are derived from drawing on the strengths of the public sector and the private sector in order to establish effective corresponding relationships; the best qualities of both sectors need to be incorporated (Seemela 2008: 484).

El-Gohary *et al.* (2006: 597) mention that stakeholder involvement and cooperation are imperative in order for PPPs to operate successfully. Transparency and trust are vital components for success. The main reason that PPPs fail is that there is a certain level of reluctance exists in cooperating with each other. The stakeholder involvement process is affected by a number of constraints, including regulations, budgets, codes and schedules. Conservation areas should preferably prioritise issues which arise in order to prevent crisis management from occurring. By preventing crisis management, a conservation area can effectively and comprehensively deal with problems which arise. Through effective communication and information exchange, a conservation area can take the necessary steps to avoid problems if they do prioritise. Problems will still arise, even if the necessary preparation is done as unforeseen circumstances always occur. Yet once the preparation is done and problems arise, the conservation area will be better prepared and can immediately take the necessary actions to resolve the problems. Joint problem solving is a possible option to consider. A conservation area should hire the best possible and most appropriate candidate to fulfil a job position, as this person will be the most likely one to contribute most significantly to the conservation area, By hiring well-qualified candidates, joint problem solving becomes an increasingly important option. A conservation area can then create the best possible solution for problems which arise. This can be done through extensive research, effective communication and brainstorming together. By having a system of adaptive and integrated management, a conservation area can prepare itself for any changes or problems which occur.

Some areas are under conservation observation yet are not designated nature reserves. There are various reasons for this, such as the area is already partially built up, or the area is too large to form into a nature reserve – such as a river extending hundreds of kilometres. Yet for those areas small enough to create nature reserves from them, it should be a necessary requirement to become a nature reserve. Once a conservation area is a nature reserve as well, it offers more protection to the area's fauna and flora, and prevents endangered wildlife

from being destroyed. This attracts more tourists to the nature reserves, creates more awareness, and generates income as a nature reserve. It could also be a rudimentary holiday spot with minimal development.

By controlling access into a conservation area with permits, or a green card, the conservation area can protect itself against people who would leave the environment in a worse condition than they found it, and it keeps away unwanted attention. By accessing permits such as green cards, or similar access cards for conservation areas, the information given when obtaining a green card offers knowledge to other places available with the access card. This creates awareness of places previously less familiar to the public. Access permits indicate the rules that apply within conservation areas, but there should be sufficient manpower to implement the rules, which include not littering, and starting fires. It is pointless and irresponsible to stipulate rules that one is unable to implement or monitor. Conservation areas can put in place tariffs and fines for disregard of the rules. Implementing tariffs or fines on over-consumption of resources is an option for governmental agencies to consider, especially regarding water and electricity consumption, which can be monitored. By limiting the usage of scarce resources, the resource can then be made available for an extended period of time. The conservation area can also offer designated places within the area for team-building for businesses. Businesses that sponsor or fund the area can be given a discount. The conservation area can make the team-building exercise a day event so that the area is not destroyed by developing it. It is a conservation area for a reason.

Regarding economically sustainable agriculture, the use of farm aid needs to be far surpassed by income and land usage of agriculture, meaning that the financial output of agriculture should outweigh the financial input. The aim is to have sustainable agriculture which yields the least damage to the land with the maximum projected outcome and income. Technological innovations are always increasing, being modified or completely reinvented. This is relevant in the farming sector as well (Van Niekerk 2009: 185). Innovations such as irrigation have become easier, more user- and environmentally-friendly. To save water, the best possible times to irrigate are those when there is the least evaporation, while giving plants an opportunity to absorb water and to allow the water to soak into the soil. Soil fertility management should be monitored regularly so that over-farming does not occur. Farmers can plant trees around the boundaries of the farms to protect crops from wind and help prevent soil erosion. Crop rotation gives soil a chance to rehabilitate by introducing nutrients back into the soil. This in turn increases the micro-variability (Matlon and Spencer 1984: 672). Problems resulting from farming practices include soil degradation in winter, droughts and floods that add to the instability of agriculture, rapid population growth, soil erosion, over-grazing and a decrease in soil fertility.

A conservation area, like any organisation, needs a wide-ranging and firm foundation and an excellent leadership structure in place in order to succeed. Having a good human resource management department is essential to deal effectively with interdepartmental issues which may arise (Van de Vliert and Smith 2004: 139).

Sustainable or renewable energy is a viable option, yet the funding for renewable energy is not as forthcoming as environmental conservationists would like it to be. Examples of sustainable energy include solar panels or wind vanes. The initial costs of implementing sustainable energy resources are far too high for the majority of the South African population to afford. The long-term benefits outweigh the initial costs, but to implement the sustainable energy source for every household is not cost productive in the short term. Sustainable energy resources require high maintenance. For an area such as Cape Town where it is windier, even in the summer, wind vanes are more practical than solar panels as the weather is overcast and rainy for most of the year.

These general solutions can be applied to the three conservation areas discussed. The following section provides the recommended conservation solutions for each area.

6.4. Recommendations

Complex environmental problems are less likely to be the responsibility of a singular organisation, but rather a collaboration of a host of agencies. A collaborative effort by numerous entities is needed when attempting to solve problems of environmental management. Holistic models of innovative solution frameworks have a tendency to focus on upstream action in using more integrated approaches to conservation as well as in prevention, which deal with the driving forces of environmental change instead of addressing problems after they have been created (Balkau 2005: 429). In other words, when incorporating many organisations in the attempt to initiate innovative solution frameworks, a crisis management approach should be avoided on all sides.

Reliable data underlying environmental management action are often difficult to gather. Some stakeholders do not to collect or discuss data which clearly show that a problem is becoming worse, and thus the stakeholders delay taking action on urgent problems. An appropriate framework is needed so that data and information systems can improve. An example of this would be effective communication strategies, regular reports, and the top tiers of management being actively involved in current projects and engaging in various interactive meetings. This can become effective within a network structure, as networks do not have hierarchies and encourage inter-organisational coalitions to develop (Müller 2008: 8). The main complexity facing conservation and environmental management in the present day has to do with the cooperation of different sectors to collaborate effectively and efficiently, as well as to make the best of available resources and expertise. What has become evident is that no one set of institutional arrangements can be expected to solve all types of collective problems.

6.4.1. Cape West Coast Biosphere Reserve

Solutions applicable to the CWCBR include:

- ✓ Eco-tourism;
- ✓ Marketing, advertising and economic sustainability and support, corporate engagement;
- ✓ Create newsletters;
- ✓ Invest in public-private partnerships, strategic partnerships, private sector engagement and participatory decentralisation;
- ✓ Stakeholder and partner engagement and involvement;
- ✓ Promote cooperation, coordination and institutional awareness;
- ✓ Ease of access and job creation;
- ✓ Promote sustainable renewable energy;
- ✓ Increase awareness, incorporate educational awareness.
- ✓ Create conservation projects for funding and to create jobs such as eradication of invasive alien plants with secondary industries flowing from it.

6.4.2. Breede-Overberg Catchment Management Agency

Solutions applicable to the BOCMA include:

- ✓ Eco-tourism;
- ✓ Involve local surrounding communities, incorporate private sector engagement, institutional awareness, strategic partnerships, participation on all levels and spheres, and create public-private partnerships;
- ✓ Implement effective co-management and cooperation;
- ✓ Promote sustainable and renewable energy.
- ✓ Promote sustainable farming practices and economically sustainable agriculture through water use authorisation conditions;
- ✓ Holistic scenario planning, create conservation projects for funding and to create jobs such as eradication of invasive alien plants with secondary industries flowing from that;
- ✓ Implement additional charges for over abstraction of water and for pollution of water;
- ✓ Promote sustainable and renewable energy such as hydro-electricity projects;
- ✓ Effective compliance monitoring of water use;
- ✓ Enforcement of standards of discharges of water containing waste to water resources;
- ✓ Implement and enforce adequate water flows and quality of water for ecological requirements as determined in the Reserve.

6.4.3. Nuwejaars Wetlands Special Management Area

Solutions applicable to the NWSMA include:

- ✓ Eco-tourism, wildlife attractions, ease of access to area to promote tourism;
- ✓ Implement economically sustainable agriculture through sustainable farming practices;

- ✓ Participation on all levels should be put into practice. Institute public-private partnerships, stakeholder engagement, institutional awareness, participation, strategic partnerships and approaches;
- ✓ Create conservation projects to attract funding internationally and from local organisations to increase awareness about conservation area through public, media and business awareness;
- ✓ Increase co-management and cooperation in scenario planning;
- ✓ Partner engagement, corporate engagement, participatory decentralisation and holistic involvement on all levels;
- ✓ Create newsletter and increase educational awareness.

6.5. Limitations of the Study and Future Research

Limitations of this research, and which are highly likely to occur in similar future research, include an unwillingness to participate in research projects by individuals. Individuals involved in various conservation areas are either overly busy or unwilling to participate. What most individuals do not realise is that the findings of research are among the possible solutions to their problems, as many individuals cannot possibly view problems from an objective point of view at all times. An outsider can more likely offer solutions, because an outside perspective is more likely to be neutral and lack prejudice. Another problem encountered was the variety in responses, which leads to the conclusion that either participants are not always honest in their answers, or that they are not fully aware what occurs in the conservation area. This will always be the case in research which relies on the opinion and analysis of other individuals. Furthermore, questionnaires must be very clear and the researcher needs to have a good understanding of the research area to be able to interpret cryptic answers. Interviews along with the questionnaire are strongly recommended rather than only questionnaires.

6.6. Concluding Remarks

With the emerging trend of environmental sustainability and the popularity of conservation efforts increasing, individuals globally have become progressively more aware of the problems facing environmentally sensitive areas. Yet most of the focus is on the conservation of fauna and flora. Most people forget about the management practices which need to be put into practice in order to sustain the conservation areas. Effective management has to constantly be improved and adapted as circumstances are constantly evolving. This study demonstrates the variance in management practices in the three different types of conservation areas, which also differ in the types of organisation each conservation area constitutes of.

The best possible recommendation that could be given here is that it is in a conservation area's best interest to find the right collection of solutions which work for a specific area, instead of trying to implement a single new solution. Ultimately, success will depend on the development of transparent and legitimate channels of dialogue and collaboration that connect the local, national and international scales of governance and research. A multitude of tried and tested

solutions are more likely to have a higher chance of success; therefore finding the right mix of solutions is imperative.

The type of conservation area, whether it is a land management area, a water management area or a biosphere reserve, needs to formulate specific strategic collaborative resource management practices which best suit the type of organisation the conservation practice entails, whether it is a non-governmental organisation, a state-run organisation or a privately run organisation. Collaborative resource management practices are essential in every conservation area. How these are implemented all depends on the various stakeholders involved.

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APPENDIX I – QUESTIONNAIRE

1. Conservation area(s) involved in:
2. How many seniors and subordinates do you have?
3. What are the aims and objectives of the conservation area (if changed from the website)?
4. With regards to the objectives and activities, how do group members within the different departments reach their goals in relation to coordination?
5. What are the core problems within the area in terms of conservation and management?
6. How do you propose to solve these problems?
7. How does management go about solving problems?
8. How are problems identified and dealt with?
9. How is government involved?
10. Which sections of government are involved (i.e. departments)?
11. Are different government departments involved in similar processes?
12. Which policies of government are used and implemented?
13. Does this conservation area have different mandates? (I.e. different government departments involved with similar/overlapping and/or conflicting programmes – policies affecting the area with different goals).
14. Is the structure of the networks loose (dependant on other stakeholders) or tight (formal/strict structure followed)
15. Are there any government officials actively involved and are they present or available at all times?
16. Who are all the stakeholders and role-players involved in the conservation area?
17. How has the involvement of stakeholders developed over time?
18. Does the conservation area receive funding, and if so, from whom (i.e. international, national, provincial, local or private organisations)?
19. How can local communities get involved?
20. Are any non-governmental organisations involved? If so, which ones?
21. How is co-operation between the various stakeholders managed?
22. Who decides which stakeholders or role-players are involved, and what their roles are?
23. How do role-players (or stakeholders) enter or leave their positions (i.e. nomination, appointment, election, etc.)?
24. How is the process of decision-making handled?
25. In terms of authority, who decides who can and cannot participate at certain levels, and what criteria is this decision based on?
26. Who makes the important decisions in the organisation (E.g. a director, a board of directors, or is everyone involved) and what is the chain of command?
27. In your opinion, how would you describe the level of formality in terms of organisation structure and legislation followed in the conservation area?
28. How often is information exchanged and how often the stakeholders interact (i.e. monthly meetings, electronic networks, etc.)?
29. Is there any formal decision making process?
30. Has this conservation area drawn up formal planning, regulation and/or contracts?
31. To what extent are the stakeholders involved integrated?
32. Is there a clearly defined chain of command and leadership structure?
33. Do any sectors overlap in terms of performing similar jobs?
34. Do any stakeholders tend to neglect their responsibility towards the conservation area?
35. How was the conservation area developed originally?
36. How is the conservation site maintained?

37. Do you foresee any improvements in the short and long term?
38. How do you propose to resolve resource conflict?
39. Are there any specific management programmes for the area?

Additional comments:

APPENDIX II – TABLE OF RESPONSES (responses arranged according to area type)

	Questions	Response 1	Response 2
1	Conservation area involved in	CWCBR	CWCBR
2	No. of seniors/subordinates	0 - 1	No Response
3	Aims and objectives of the conservation area	To conserve nature and make the world a better place for all mankind	No Response
4	Objectives and activities - how group members in diff dept reach goals, relation to coordination	They have incentives	No Response
5	Core problems in terms of conservation & management	Maintenance of the area	No Response
6	How do you propose to solve these problems?	More coordination between workers	No Response
7	How does management go about solving these problems?	Meetings	No Response
8	How are problems identified and dealt with?	Anonymous complaints	No Response
9	How is government involved?	Government is not involved	No Response
10	Which sections/departments of government are involved?	DAFF	No Response
11	Diff governmental dept involved in similar processes?	Yes	Yes
12	Which policies of government are used and implemented?	A; B; C; E; J; K; L; M; N; O	A; B; E; F; G; H; J; K; L
13	Does this conservation area have different mandates?	Yes	Yes
14	Is the structure of the networks loose or tight?	Loose	Tight
15	Are there any government officials actively involved?	No	Yes
16	Are government officials available at all times?	No	Yes
17	No. of stakeholders involved in the conservation area?	1 - 5	No Response

18	How has the involvement of stakeholders developed over time?	With promise as more stakeholders have been incorporated into the conservation area as the conservation area has developed.	Stakeholders approach the CWCBR for advice and assistance
19	Does the conservation area receive funding, and if so, from whom?	Yes, private organisations	Yes, International funding; Provincial funding
20	How can local communities get involved?	Volunteer work, become members	Becoming members
21	Are any non-governmental organisations involved?	Yes	Yes
22	How is co-operation between the various stakeholders managed?	Meetings	On a project-to-project basis
23	Who decides which stakeholders/ role-players are involved & what their roles are?	Board Members	Board Members
24	How do role-players (or stakeholders) enter their positions?	Individual selection	Appointment; elections
25	How is the process of decision-making handled?	Discussions, meetings	Democratically
26	In terms of authority, who decides who can and cannot participate at certain levels?	Board Members	Board Members
27	What criteria are these decisions based on?	Qualification	Qualification; Stakeholder Involvement; Work done; Funding; Availability; Level of commitment to area
28	Who makes the important decisions in the organisation, and what is the chain of command?	Director; Chairperson; Board of Directors; Gov officials; Other	Board of Directors; Chairperson; Director; Other (programme manager, policy maker)
29	Describe the level of formality in terms of organisational structure and legislation.	High; Tight/Strict	High; Tight/Strict

30	How often is info exchanged, how often do stakeholders interact?	Electronic networks; Memorandums	Monthly Meetings
31	Is there any formal decision-making process?	Yes	Yes
32	Has conservation area drawn up formal planning, contracts?	Yes	Yes
33	Is there clearly defined chain of command/leadership structure?	Yes	Yes
34	Do any sectors overlap in terms of performing similar jobs?	Yes	Yes
35	Do any stakeholders neglect responsibility?	No	Yes
36	How was the conservation area developed originally?	Hotspot/Biodiversity endangerment	Govt officials; Private Sector; Environ reasons; Hotspot/ Biodiversity endangerment
37	Any improvements in short/ long term?	Yes	Yes
38	How do you propose to resolve resource conflict?	Resource control - manage in controlled environment if possible	Mediation
39	Any specific management programmes for the area?	Yes	Yes
40	Any additional comments (for survey in general)?	N/A	No Response

	Response 3	**Response 4**	**Response 6**
1	Conservation Stewardship	CWCBR	CapeNature
2	4 - 6	4 - 6	0 - 1
3	Website of CWCBR	To manage conservation, development and human needs	Conserving the Biodiversity of the WC
4	Staffs mainly have their own projects they are responsible for.	Through meetings and debate meetings	Through an organisation Strategic Plan and Annual Performance Plans
5	Co-ordination problems, management issues, communication, funding	Management issues, funding	Co-ordination; Funding

6	Biosphere reserves should remain in more of strategic, co-ordination role; Projects should be outsourced and overseen/managed	Debate in meetings	Plans of operations; Business case to treasury
7	Occasional disagreement from directors who prefer more grassroots work.	Through meetings	Priority setting; Performance management system; Partnerships; Integrated management
8	Anonymous complaints, meetings, person to supervisor/ manager; Mainly work one on one	Anonymous complaints; Meetings	Meetings
9	Funding; only admin funds. Attendance at board meetings is where input is provided	Funding; Oversee employees	Funding; Management; Oversee employees; Active interaction
10	Municipality; DEA; DAFF, Only at Provincial level	Municipality; DEA; DAFF; DEADP Provincial	Municipality; DEA; DWA; DAFF; DoT; DED
11	Yes	No Response	Yes
12	A; B; D; E; F; G; H; L	No Response	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q
13	Yes	No Response	Yes
14	Loose	No Response	Loose
15	No	No Response	Yes
16	No	No Response	Yes
17	13 - 16; Multiple Landowners	No Response	4 - 6
18	The basis is engagement with landowners to sign up contract nature reserves, therefore multiple landowners are engaged with.	Improved as more stakeholders are now available for conservation as small grants have been made available and landowners have been included	From informal to formal relationships
19	Yes, international funding; Provincial funding; Local funding; Private Organisations	No Response	Yes, international funding; National funding; Provincial funding
20	Yes, they can become members of the CWCBR	No Response	People and Conservation, Youth, Volunteer and other relevant programmes in CapeNature
21	No	Yes	Yes

22	Monthly board meetings, which includes technical advisors and representatives of key stakeholders.	Meetings	Overall Programmes
23	Chairperson; Board members; Government officials	Board members; Government officials	Board Members
24	Nomination; Appointment; Elections; General agreement/vote; Board members are elected.	Appointment; General agreement/vote	Appointment
25	Board makes decisions. If difference of opinion, the topic is put to a vote.	Co-operation	Board Meetings and discussion
26	Board Members	Government officials	Chairperson
27	Board members have equal voting right. Only nominated directors have voting rights.	Qualification; Stakeholder involvement; funding; Level of commitment to area	Qualification; Stakeholder involvement; Work done
28	Chairperson, Board of Directors (1); Govt officials, Other (Programme Manager) (2)	Govt officials; Board of directors; Chairperson; Director; Other	Chairperson; Board of Directors; Director; Govt officials; Other
29	Medium; gaps filled as organisation grows	Medium; Tight/Strict	High; Tight/Strict
30	Monthly Meetings	Electronic Networks; Memorandums	Electronic networks
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	Yes	Yes	Yes
35	Yes	Yes	No
36	Govt officials; Civil society interest and concern	Govt officials; Environ reasons; Hotspot/ Biodiversity endangerment	Government Officials
37	Yes	Yes	Yes
38	Fund raising is essential, and good fund raising skills should be part of the human resources within the organisation	Teaching people about the importance of the environment and how valuable resources are.	Talks
39	No	Yes	Yes
40	No Response	No Response	No Response

	Response 7	Response 10	Response 5
1	West Coast Fossil Park (CWCBR)	CWCBR	Breede CMA
2	7 - 10	2 - 3	No Response
3	To conserve the flora and fauna; remove alien vegetation	Conservation of Biodiversity	No Response
4	Group meetings; setting targets; networking	N/A	No Response
5	Co-ordination; Management; Communication; Funding; Maintenance of area	Management Issues; Communication; funding; Maintenance	No Response
6	Seek more funding in order to employ skilled staff to manage the project	N/A	No Response
7	Engaging and discussing the issues	N/A	No Response
8	Meetings; person to supervisor/manager	Anonymous complaints; Meetings	No Response
9	Funding	Government is not involved	No Response
10	Expanded Public Works - very briefly	N/A	No Response
11	Yes	No	No
12	A; B; E; G; H; K; L	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q	E
13	No	No	Yes
14	Loose	Tight	Loose
15	Yes	No	No
16	No	No	No Response
17	Lot more	9 - 12	1 - 5
18	Increased over time, but still developing	Gradually developed to include more and more stakeholders as resources are made available	it has been ad hoc and erratic
19	Yes, International funding; Provincial funding; Private Organisations	Yes, International funding; Private Organisations	No
20	Small Grants	Creating awareness for conservation as well as volunteer work	With alien clearing; eco trails; development and tour-guiding
21	No Response	No	No

22	Programmes/Projects and meetings	Meetings/Discussions	Meetings
23	Board members and chair person	Board Members	Board Members
24	Nomination; Appointment; Elections	General Agreement/Vote	Nomination
25	Discussions	Meetings from Board	Co-operation, Meetings
26	Board Members	Conversationalists	Chairperson and CEO
27	Qualification; Stakeholder Involvement; Work done	Work Done	Qualification, work done, availability
28	Director; Board of Directors; Chairperson; Govt officials; Other (conservationists)	Board of Directors; Director; Chairperson; Govt Officials	Board of Directors (1); Chairperson, Director (2); Govt officials (3)
29	High; Tight/Strict	Tight/Strict	Medium, Tight/Strict
30	Monthly Meetings; Electronic Networks	Monthly Meetings	Monthly Meetings and electronic networks
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	Yes	Yes	No
35	No	Yes	No
36	Government officials; Hotspot/Biodiversity endangerment	Private Sector Officials	Government officials, environmental reasons
37	Yes	No	Yes
38	Education, raising funds to support conservation area	Dealing with conflict as it occurs and not leaving it to become a bigger problem in the long run.	Educating people about conservation and water, and ways to save it, training new officials and employees in effective manner so that they can carry out their jobs properly, and dealing with conflict when it arises.
39	Yes	Yes	Yes
40	No Response	No Response	No Response

	Response 9	**Response 14**	**Response 15**
1	Breede Overberg CMA	Breede-Overberg CMA	Breede Valley Municipality
2	2 - 3	2 - 3	2 - 3

3	Conserve the natural habitat and wildlife species that exist. Raise awareness.	check website	website of Breede valley municipality
4	follow guidelines set out and follow initiatives when receive new methods or ideas	no problem with correct procedures, org still young problems handled day by day	Conflicted goals, discuss with budget - priorities get the budget. Work in silos
5	Co-ordination; Communication; Funding	Communication; funding; government officials guarantee money but don't deliver.	Co-ordination; Management; Communication; Funding; Maintenance of area;
6	Apply for private funding. See where co-ordination is lacking, resolve the issues at hand. more open communication	Relationship between chairperson and CEO must be excellent. Problems are solved day by day.	Deal with the area as a reserve as a whole, not broken down. Go into PPPs
7	Being more open to suggestion and applying what has been discussed in meetings in order to resolve the issues	Technical side manages, CFO - cant outsource jobs otherwise problem doesn't get dealt with	Try what they can with what they can. Crisis management, no broader thinking, ostrich method is implemented.
8	Meetings	Meetings; Person to supervisor/manager; not serious problems right now	Anon complaints; Meetings; Person to supervisor/manager; people can phone call centre
9	Funding	Funding; Mngmnt; CMA have to create own income. CMAs fall directly under minister of DWA,	Funding; Management; Active interaction; Gov. is definitely involved, they are local Gov.
10	Municipality; DEA; DWA; DAFF; DoT; DED	Municipality, DWA, DAFF, Dept. of Agric involved due to extensive amount of farms, municipality - more 3rd level	Municipality; DEA; DWA; DAFF; DoT; DED; upper Breede has extensive planning as all departments sit in and plan
11	Yes	No	Yes
12	B; C; D; G; H; K; N; P; Q	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q	A; B; D; E; I; J; K; N; Q
13	Yes	Yes	No
14	Loose	Loose	Tight
15	No	No	Yes
16	No	Yes	No
17	1 - 5	9 - 12; have 12 people now, 6-8 would be more optimum.	13 - 16; roughly, not sure
18	Increased in past few	Slowly	not sure, not very

	years		settled yet
19	Yes; Government (Provincial funding)	Yes, National funding; not yet with international funding. CMA should eventually be funded by taxes from water	No, National funding; Provincial funding; Local funding; if lucky will form part of budget in municipality
20	Awareness programmes, working with tourism industry to promote the conservation	In a positive way: All people use water, so everyone is involved. In a negative way: most if not all people are polluters.	Hotline, offering PPPs, offering proposals to councils for ideas for conservation protection and clearance
21	Yes	Yes	Yes
22	Meetings	Personnel that goes out to NGOs/public meetings and teaching them about water.	Normally meetings, discussions and get actively involved
23	Board members; Conservationists	Government officials Gov officials decide who is going to be on the board	Board members; Government officials; depends on job description
24	Nomination	Democratically appointed by the minister and officials of the minister.	Nomination
25	Co-operation	Open discussion, with the option of voting	Meetings (High - Middle stakeholder level)
26	Board Members	CEO, if there is a problem, the CEO and chairperson discuss it	Chairperson
27	Qualification; Stakeholder involvement; Work done; Level of commitment to area	Work done; Job description, etc. along those lines	Level of commitment to area. All levels of stakeholders must be involved
28	Director, Chairperson, Board of Directors (1); Gov officials (3)	Board; Director; Chairperson; Govt officials; Other (initial oversight so don't go off track)	Other (policy makers, which are the council); Director, Board of directors, Govt officials
29	Medium	Low; Tight/Strict	Medium; Loosely/Basic Outlines
30	Memorandums	Monthly meetings every three months	Monthly meetings; GIS confirmation monthly, electronic networks used daily.
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	Yes	Yes	Yes
35	Yes	No	Yes
36	Environ reasons; Hotspot/ Biodiversity endangerment	Govt officials; 2005 by Dept water affairs	Hotspot/Biodiversity endangerment by CapeNature

37	Yes	Yes	Yes
38	Find out what the conflict is, then propose a meeting to discuss and resolve it	Resolve conflict of water: need BEE in farming to work, not continue what government been doing. People need to be qualified to use water so can be responsible to work with water. Need to manage water usage in an effective and an efficient way, make it sustainable.	Awareness and education/knowledge. One can't teach people enough
39	Yes	Yes	Yes
40	No Response	Management programmes in draft CMS 2011	No Response

	Response 16	**Response 17**	**Response 18**
1	Breede River CMA, CWCBR	Breede-Overberg CMA	Water management in the Western Cape (SANparks)
2	0 - 1	0 - 1	2 - 3
3	Same as website, based on the business plan and objectives, is valid until 2013	Refer to website and CMS 2011 book for vision	SANparks website
4	The board talk about everything on the business plan, must be able to understand all fields	Co-operation is to jointly nurture, take responsibility, and comply so water well managed.	Staff have own project they are responsible for, and then through debate and meetings
5	Co-ordination; Management; Validations and verifications need to be done	Communication; funding; language barrier, never get enough funding	Lack of funding; Maintenance of area
6	Problems need to be dealt with when identified and not when the problem has expanded.	systematically, with meetings, evolution of PPPs eventually be more, prioritizing problems	CoCT integrated a pollution policy - all role players involved interact with diff dept. Intensive law needs to be implemented.
7	Follow networks, board, CEO. The CEO and board deal with situations outside organisations that affect the CEO.	Engaging in meetings and discussing the questions and answers. grassroots work needs to be comprehensive	Integrated management, effective coop & compromise in needs to be met by discussing issues, thinking outside the box.
8	Anon complaints; Meetings; Person to supervisor/ manager; CEO allocate	Anon complaints; Meetings Person to supervisor/manager	Anonymous complaints, Meetings, Person to supervisor/manager

	complaint		
9	Funding; CEO leases with regional office, align with Nat government & what doing. independent	Funding	Funding; Management only partly management
10	Municipality; DEA; DWA; highest income comes from agric and tourism	Municipality; DWA; DAFF	Municipality; DEA; DWA; DAFF; DED
11	No	No	Yes
12	A; B; E; H	A; B; C; D; E; F; G; H; J; K; L; N; O; P; Q	A; B; C; E; K; L; N; O
13	No	Yes	Yes
14	Tight	Loose	Tight
15	Yes	No	Yes
16	Yes	Yes	Yes
17	9 - 12; more than 20 stakeholders, but 12 members on the board	9 - 12; 12 board members	6 - 8
18	Identified on what needs to be achieved or how problems come about. Based on experience from Act, as organisation grows, some part of others. Deal with directly sometimes.	Gradually	With Promise
19	Yes, International funding; National funding	Yes, National funding	Yes, National funding; Provincial funding; Local funding; Private Organisations
20	CMA would advertise so community can make suggestions what would like to see done. approach CMA	Become members, create PPPs, small grants, help out with clearing conservation sites of litter and so forth.	Environmental education is a key variable, learners are invited to reserves. important to safeguard and protect the environment
21	No	Yes	No
22	Through forums, there are 2 major forums in the region, and nine other smaller forums.	Project to project basis, government acts stipulate which stakeholders needed for which projects.	With careful consideration, relationships are complex, management. Most of basin management depends on broad stakeholder involvement

23	Govt docs. act stipulates what needs to be achieved and which stakeholders needed	Government officials; Minister of DWA	Board members; Conservationists; Govt officials
24	Nomination; Appointment; board members are nominated by stakeholders	Nomination; Appointment; Individual selection	Nomination; Appointment; Individual selection
25	General Agreement	Democratically, with confidentiality, and in open discussions	Careful discussions to make sure everyone has clear understanding on decisions; meetings,
26	Manager/CEO/ Executive Director	Board Members CEO	Board Members Conservationists
27	Qualification; Work done; Availability; commitment to area; experience and knowledge	Qualification; Work done; Availability; Level of commitment to area	Qualification; Stakeholder involvement; Work done; Availability; Level of commitment to area
28	Board; Chairperson; Director; Other (Senior manager, chief of finance office); Gov officials	Other (Minister of Dept Water Affairs); Chairperson; Board of Directors; Govt officials	Board; Director; Other (conservationists on ground level); Chairperson; Govt officials
29	High; Tight/Strict	Medium; Tight/Strict	Medium; Tight/Strict
30	Monthly meetings Quarterly meetings for board. For CMA, all options	Monthly meetings ALL of the above	Monthly meetings and electronic networks
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	No	Yes	Yes
35	No	No	Yes
36	Govt officials; Environ reasons; Govt Gazettes	Govt officials; Environ reasons; Minister of DWA	Environmental reasons
37	Yes	Yes	Yes
38	Creating clear awareness of resources managed not just restrictions but explain and be reasonable. Create programmes to help people save in small ways, fix the small things. If law is disregarded, high fee charges, pros and cons	Tariffs, penalties for over-consumption, education and knowledge. people need to understand the importance of water in South Africa, everyone is dependent on water, but don't realize the expense, quality and quantity of it in SA	Education, training, involving community to raise awareness, etc.

39	Yes	Yes	Yes
40	No Response	No Response	No Response

	Response 11	**Response 12**	**Response 19**
1	NWSMA (Shareholder - private land owner)	NWSMA (Shareholder - private land owner)	NWSMA (Shareholder - private land owner)
2	2 - 3	4 - 6	0 - 1
3	To attend to conservation and land management, agricultural objectives and goals	Website	5 objectives and goals on the website (include Agenda 21)
4	Weekly meetings	Weekly meetings where all departments attend and plan activities for the week.	Executive committee, funding, mngmnt office include a developmental framework; objectives in framework.
5	Co-ordination; Management; Communication; funding;	Management issues; Maintenance of area	Communication; problems in agric, water problem.
6	Employing more sufficiently qualified personal Better funding Better organising	We have very little staff in relation to the area we have to maintain. We need to prioritise better.	Education to communities, response adv and disadvantage, economic sense has become naturally economically viable
7	No idea, because there has been no change in the last 3 years	Strategic resource allocation.	Not crisis manage, plan ahead. Quarterly meetings, communication is done within meetings.
8	Anonymous complaints; meetings; person to supervisor/manager	Anonymous complaints; Meetings; Person to supervisor/manager	Meetings; Person to supervisor/manager; land owner communicator to exec director
9	Funding; management; overseeing employees	Funding	Funding; Management; DBSA with grant and planning, table mountain fund
10	Municipality, DEA and DWA	Municipality; DoT	DEA; DAFF; mostly dept. of agriculture, CapeNature (relationship here could be better), SANparks
11	Yes	No	Yes
12	A; B	B; E	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q
13	Yes	No	No
14	Tight	Tight	Tight

15	Yes	No	No
16	No	No	No
17	6 - 8	1 - 5	23 land owners, 3450 stakeholders (people involved in area)
18	Better Funding, Better facilities	As we offered more facilities and expanded our infrastructure, more stakeholders have come into play	Gotten better
19	Yes, Private Organisations; Local funding	Yes, Local funding; Private Organisations	Yes, International funding; Private Organisations; Germany, TMF, WWF, DBSA
20	By helping in water saving projects; Saving special conservation areas and by becoming involved in projects	Becoming Members, volunteer work, small grants; By reducing their carbon footprints and keeping the area free of pollution	Become members
21	Yes	Yes	Yes
22	Meetings and discussions	Biannual meetings, email communication	SMA vehicle for facilitation
23	Chairperson; Board members	Chairperson; Board members	Board members; executive committee with management
24	Appointment; General Agreement/ Vote	General Agreement/Vote	Nomination; Appointment; Appointment by executive per constitution regulation
25	Discussions and Meetings	Strategic decisions are made by top tier management.	Constitution and development framework for diff aspects, executive committee discuss decisions and implement choices made.
26	Chairperson; Board Members	Board Members	Executive Committee
27	Qualification; Stakeholder involvement; Work done; Funding; Availability; Level of commitment	Qualification; Stakeholder involvement; Availability	Qualification; Stakeholder involvement; Work done; Funding; Availability; Level of commitment to area
28	Director, Chairperson (1); Board; Govt officials; other	Board of Directors; Govt officials; Chairperson; Director; Other	Board; Chairperson; Director; Other (treasurer, company act laws) Govt Officials
29	High; Tight/Strict	High; Tight/Strict	High; Tight/Strict detailed and intense

30	Monthly meetings	Electronic networks are used, mostly weekly basis meetings though.	Weekly basis meetings x2-3 a day, x3-4 member meetings per year
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	Yes	Yes	Yes
35	Yes	No	No
36	Private sector officials	Environmental reasons by Private sector officials	Private Sector officials
37	Yes	Yes	Yes
38	No Response	Strategic allocation of resources, based on where they are needed most.	Prevent and pro-management of conflict, constitution resolve conflict all made commitment. EIA process to, scientific proactive present, monitoring and evaluation, management plan needs to be effective and efficiently applied
39	No	No	Yes
40	No Response	No Response	No Response

	Response 20	**Response 21**	**Response 22**
1	NWSMA (project coordinator)	NWSMA (Elim Valley)	NWSMA (Shareholder - private land owner)
2	Other - 3	2 - 3	0 - 1
3	Same as website, 5 aims and objectives, objectives only relevant on state ground in state org	Ensuring sustainable agricultural projection, wetlands rehabilitation (website)	Website
4	N/A. executive runs entire SMA, one mngmnt. Development framework,	Executive runs entire SMA, so only one management,	Executive committee makes decisions for SMA.
5	Funding; Maintenance; everything related to funding	Funding; Maintenance	Funding; Maintenance
6	Need to find ways to get funding, need to filter in co-ordination, management as sustainable as length of project.	Funding issues to be addressed, area is a private org, not well known yet. Management is lacking due to funding.	Need constant reliable funding, and need to put actions in place to be able to develop effectively.

7	Various methods being tried for 3 yrs of SMA involvement, 6 yrs of Agulhas trying to find way to be sustainable.	Good communication, meetings, discussions, deals with the problems as they arise in a head-on approach.	Meetings, discussion, and especially acting on the decisions made.
8	Meetings; email, telephone, written from members. Not public org, involvement.	Meetings	Meetings (Land Owner Association)
9	Management; Active interaction; not sure entirely how Gov. is involved. very little support for projects	Management; Active interaction; the fin dept of government is involved in mngmnt of fin, but don't fund or provide support	Management
10	Municipality; DEA; DWA; DAFF; DoT, DED; CapeNature, SANparks	Municipality; DEA; DWA; DAFF; DoT; DED; CapeNature, SANparks, DEA include provincial dept of DEA and planning	Municipality, DEA; DWA; DAFF especially involved. DED; SANparks and CapeNature
11	Yes	Yes	Yes
12	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q	A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q	A; E; F; G; H; L; M; N; O; P
13	No	No	No
14	Tight	Tight	Tight
15	Yes	Yes	No
16	No	No	No
17	+- 23 landowners, these 23 represent population of 3450 within the SMA	23 land owners association members	Land Owners Association of 23 members
18	Gradually. The motivation is by need and threat (fear and security) need = value. Land owners - land under threat needed to address it so formed association. Group is represented by individuals.	Over time has been gradual, but starting to increase and pick up speed	Area still relatively new, so still being developed
19	Yes, International funding; funding from membership fees	Yes, International funding; Private Organisations; membership fees	Yes, International Funding; Membership fees, Private organisations
20	Got to be a land owner to be a member. community get involved with entrepreneurship and small businesses,	Have to be a land owner to be part of land owner association, these 23 people represent the population	Through local or small businesses and supporting them.
21	Yes	Yes	Yes

22	Communication strategy, written documents, etc.	Written documents, effective communication strategies	Meetings, discussions and effective communication.
23	Chairperson; Board members; Conservationists; Govt officials; not long term relationship	Chairperson; Board members; Conservationists	Board Members
24	Appointment; Elections; General agreement/vote; membership fixed by title deeds	Appointment; Elections; General agreement/vote; membership fixed by title deeds	Appointment; General agreement
25	Proposal, discussion and decision. Executive make day to day decisions, members give guidance.	executive makes the day to day decisions, members of land owner association give assistance if necessary	Meetings
26	Board Members	Board Members	Board Members
27	Capacity	Qualification; Stakeholder involvement; Work done; funding; Availability; Level of commitment to area	Stakeholder Involvement; Availability; Level of commitment to area
28	Board; Chairperson; Director; Other (section 21, company for NWS, NW land owners association)	Board; Chairperson; Director; Other (land-owner assoc, the members i.e. treasurer, admin manager, etc.)	Board; Chairperson; Director; Other (Land Owners Association of 23 members)
29	High; Tight/Strict NEMA, structure, legal and management are tight	High; Tight/Strict	High; Tight/Strict
30	Monthly meetings ALL of the above.	Weekly basis meetings ALL. communication is essential	Monthly meetings (quarterly official meetings)
31	Yes	Yes	Yes
32	Yes	Yes	Yes
33	Yes	Yes	Yes
34	No	No	No
35	No	Yes	No
36	Private Sector; initiative with land owners association	Private Sector; land owners association of 23 members	Private Sector Officials
37	Yes	Yes	Yes
38	Education, training, proper delegation, sustainable development, effective management, effective funding	Prevention, pro-management, education, sustainable development, tariffs, levies and fines.	Teaching people how to use resources productively and pro-actively, as well as management in a sustainable way

39	Yes	Yes	Yes
40	No Response	No Response	No Response

	Response 23
1	NWSMA
2	4 - 6
3	The conservation of the natural plant life within this area.
4	Group work, strategic planning, inter branch meetings, performance evaluations
5	Funding; maintenance of area
6	Public should be made more aware of the environment, possible awareness campaigns,
7	Management is busy implementing steps to increase funding within this specific area of concern.
8	Meetings
9	Oversee employees
10	DAFF
11	Yes
12	A; B; D; O
13	Yes
14	Tight
15	Yes
16	No
17	23 Land Owners
18	I'm not at liberty to say
19	Yes, Private Organisations
20	By creating more awareness of the importance of the conservation of the environment.
21	Yes
22	It is managed with confidentiality, care and high importance
23	Chairperson
24	Elections
25	By voting of members of the board
26	Board Members
27	Qualification; Work done; Level of commitment to area
28	Board of Directors; Chairperson; Other (LOA); Govt officials
29	Tight/Strict
30	Weekly Basis meetings
31	Yes
32	Yes
33	Yes
34	Yes
35	Yes
36	Private Sector Officials
37	Yes
38	If we all share, we will all have resources
39	Yes
40	Good Survey!